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1986-87

Brandeis University Bulletin

Graduate
School of Arts
and Sciences



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1986-87

Brandeis University
Waltham, MassachusettsGraduate School of
Arts and Sciences

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Section 2B of Chapter 151C of the Massachusetts General Laws provides that: "Any student [...] who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be [so] excused. . . . and shall be provided with an opportunity to make up such examination, study, or work requirement which he may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged . . . for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section."

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It is the policy of Brandeis University not to discriminate against any applicant on the basis of race, color, religion, sex, sexual or affectional preference, age, national origin, veteran or disability status. The University operates under an affirmative action plan and encourages minorities and women to apply, both in terms of employment and to all the rights, privileges, programs, and activities generally accorded or made available to its students. Inquiries concerning discrimination may be referred to the Assistant to the President for Affirmative Action, Gryzmish Building, Brandeis University and/or to the Director, Office for Civil Rights, U.S. Department of Education, Washington, D.C.

Programs, requirements, fees and other information are set forth herein as they exist at the date of this publication. Brandeis University reserves the right to make changes without notice.

Academic Calendar 1986-1987

Fall Term

Wednesday	August 27	Returning students register. Fees are payable in full at this time. Students who register later will be fined \$10.	Wednesday and Thursday	December 10 and December 11	Study days.
Thursday	August 28	New students register. Fees are payable in full at this time. Students who register later will be fined \$10.	Friday through Friday	December 12 December 19	Examination period. Winter Recess begins after last examination.
Thursday and Friday	August 28 and August 29	Sectioning.	Friday	January 2, 1987	Fall Term grades due and Incompletes from Spring Term 1986. Final day for faculty certification that February master's candidates have completed degree requirements, including language(s) and theses, and that Ph.D. candidates have defended dissertations. Final day for February degree candidates to discharge any financial indebtedness to the university.
Monday	September 1	No University Exercises.			
Tuesday	September 2	Opening day of instruction in courses.			
Tuesday	September 16	Final day for filing Study Cards. No program changes for Fall Term may be made after this date.			
Monday	October 13	No University Exercises.	Friday	January 9	Final day for admission to candidacy and for completion of language requirements for students expecting to earn the Ph.D. in May 1987. Final day for February doctoral candidates to deposit dissertations at the Graduate School Office.
Tuesday	November 11	No University Exercises.			
Thursday and Friday	November 27 and November 28	No University Exercises.			
Tuesday	December 9	Last day of instruction.			

Academic Calendar 1986-1987

Spring Term

Monday	January 12	Registration for students entering Spring Term. Registration procedures begins for returning students. First day of instruction in courses.	Tuesday through Tuesday	April 14 April 21	Spring Recess
Monday	January 19	No University Exercises.	Friday	April 17	Final day for faculty certification that May Ph.D. candidates have defended dissertations. Final day for May degree candidates to discharge any financial indebtedness to the University.
Tuesday	January 27	Last day for filing Study Cards. No program changes may be made after this day.	Wednesday and Thursday	April 29 April 30	Study days.
Monday	March 2	Final day for filing Application for Financial Aid for 1987-88.	Friday through Friday	May 1 May 8	Examination period.
Monday through Friday	March 2 March 6	Mid-term break.	Tuesday	May 5	Final date for May doctoral degree candidates to deposit dissertations at the Graduate School Office.
Monday	March 9	Last day for May degree candidates to submit drafts of theses and dissertations to department chairs and to file Application for Degree with Graduate School Office.	Monday	May 11	Grades due for all degree candidates no later than 10 a.m. Final day for faculty certification that master's candidates theses have been accepted.
Wednesday	April 1	Final day for master's candidates to complete foreign language requirement(s) for May degree. Final day for completion of language requirements for students expecting to earn the Ph.D. in February 1988.	Sunday	May 17	Commencement.
			Tuesday	May 19	All Spring Term grades due and Incompletes from Fall Term.

Brandeis University

Founded in 1948, Brandeis University is recognized as one of the finest private liberal arts universities in the United States. It received accreditation within five years, the shortest possible time, and was awarded recognition by Phi Beta Kappa in 1961, only 13 years after founding—the youngest institution so honored in over 100 years. It is the only Jewish/founded, nonsectarian institution of higher learning in America and was named for United States Supreme Court Justice Louis Dembitz Brandeis (1856-1941).

Of the approximately 2,000 accredited colleges and universities in the nation, Brandeis is one of only 100 recognized as research universities. As such, Brandeis combines the breadth and range of academic programs usually found at much larger universities with the intimate educational atmosphere of an undergraduate college.

Brandeis University is accredited by the New England Association of Schools and Colleges, Inc. Originally accredited in 1953, Brandeis was approved in 1977 for continuing membership in the Association for ten years, the maximum period permissible.

A Brandeis education encourages personal fulfillment, but only within the framework of social responsibility. Equipped by a liberal arts education, the individual sees reality as a whole with many intricately connected parts. That individual rejects the idea that there is only one truth, one perspective, one redeeming set of values. Study of the arts and sciences is a time of inquiry, honest skepticism, and evolution of the intellect.

For full information on the undergraduate curriculum, see the Bulletin of the College of Arts and Sciences.

Brandeis University is a community of scholars and students united by their commitment to the pursuit of knowledge and its transmission from generation to generation. As a research university, Brandeis is dedicated to the advancement of the humanities, arts, social, natural, and physical sciences. As a liberal arts college, Brandeis affirms the importance of a broad and critical education in enriching the lives of students and preparing them for full participation in a changing society, capable of promoting their own welfare, yet remaining deeply concerned about the welfare of others.

In a world of challenging social and technological transformation, Brandeis remains a center of open inquiry and teaching, cherishing its independence from any doctrine or government. It strives to reflect the heterogeneity of the United States and of the world community whose ideas and concerns it shares. In the belief that the most important learning derives from the personal encounter and joint work of teacher and student, Brandeis encourages both undergraduates and postgraduates to participate with distinguished faculty in research, scholarship and artistic activities.

Brandeis was founded in 1948 as a nonsectarian university under the sponsorship of the American Jewish community to embody its highest ethical and cultural values and to express its gratitude to the United States through the traditional Jewish commitment to education. By being a nonsectarian university that welcomes students and teachers of every nationality, religion and political orientation, Brandeis renews the American heritage of cultural diversity, equal access to opportunity and freedom of expression.

The university that carries the name of the Justice who stood for the rights of individuals must be distinguished by academic excellence, by truth pursued wherever it may lead and by awareness of the power and responsibilities that come with knowledge.

As adopted at the meeting of the Board of Trustees, December 6, 1984.

The Graduate School of Arts and Sciences

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University's Board of Trustees authorized graduate study in the departments of Chemistry, Music, Psychology, and Near Eastern and Judaic Studies. The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the president and the dean of the faculty, ex-officio; the dean of the Graduate School; and one representative, usually the chair, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the president on the recommendations of the dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examination; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The dean of the Graduate School is the chair of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists, and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student. The graduate programs are designed to educate broadly as well as train professionally.

Degrees are granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements cannot, therefore, be regarded as the sole requisite for degrees.

Areas of Graduate Study

During the academic year 1986-1987, graduate programs will be offered in the following areas:

1. Anthropology
2. Biochemistry
3. Biology
4. Biophysics
5. Chemistry
6. Comparative History
7. Computer Science
8. English and American Literature
9. History of American Civilization
10. International Economics and Finance
11. Jewish Communal Service
12. Joint Program of Literary Studies
13. Mathematics
14. Music
15. Near Eastern and Judaic Studies
16. Photobiology
17. Physics
18. Politics
19. Psychology and Cognitive Science
20. Sociology
21. Theater Arts

Graduate School

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02254-9110.

University Libraries

The Brandeis University Libraries, consisting of the Main Library and the Gerstenzang Science Library, have combined collections of 800,000 volumes, 650,000 microforms, 260,000 U.S. documents, 7,100 serials and 62 newspapers.

The Main Library, composed of the Bertha and Jacob Goldfarb Library and the Rapaport Treasure Hall, houses collections supporting the humanities and the social sciences; Judaica and creative arts. In addition, the library is a selective government document depository, emphasizing labor, health, politics and statistics. There is also a legal reference collection, providing sources on both the state and federal levels.

The Judaica Department's reading room houses one of the country's most important collections of reference materials and basic texts pertaining to Judaic and Islamic studies,

the ancient Near East, and the modern Middle East. Current periodical indexes relating to these disciplines are also housed in the reading room.

The Norman and Rosita Winston Creative Arts Center houses the collections and facilities in music and fine arts. Over 13,000 volumes, emphasizing scholarly editions in medieval, Renaissance and baroque music, make up the musical score collection. In addition, there is a 1500 volume Creative Arts reference collection. The sound recording collection contains over 15,000 discs, tapes and cassettes with facilities to accommodate 72 listeners.

The Rapaport Treasure Hall is the home of the Special Collections Department and the Vito Volterra Cultural Center. This section includes the rare books collection, the manuscript collection and some Brandeis archival material. Among the most important collections are the Spanish Civil War collection, the Leonardo Da Vinci collection, the Vito Volterra collection on the History of Science and Mathematics, the McKew-Par Collection on Magellan and the Age of Discovery, and the Justice Brandeis Collection.

The Gerstenzang Science Library, located within the science complex to allow convenient access by its users, contains the collections supporting the physical and natural sciences and mathematics. Containing more than 100,000 volumes and over 900 periodical subscriptions, the library is a reference and research facility for the science complex, providing materials for advanced independent work as well as supporting instructional programs.

The Brandeis University Libraries use an integrated automated system known as LOUIS (Library Online User Information System). As an online catalog, it offers access to most of the library materials in the University Libraries through terminals located around the library.

Special services are available in the libraries to assist in the research process. Librarians provide computerized literature searches of databases on a cost recovery basis. Access is available through BRS, Dialog, NLM (National Library of Medicine), and CAS (Chemical Abstracts Service). Orientation to the libraries and instruction in the use of the collections are available by request at the reference desks. The Interlibrary Loan Service provides books or photocopies of materials not owned by the University Libraries. Brandeis is a member of the Boston Library Consortium, composed of twelve academic and research institutions in the Boston area. The consortium provides virtually free interlibrary loans, a union list of serials and cooperative access to collections.

Admission

As a rule, only well-qualified men and women who have completed the normal four-year program leading to the bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate programs in biochemistry, biophysics, politics, and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. Applicants to the Jewish Communal Service program must submit the results of either the Graduate Record Examination or the Miller Analogies Test. All other applicants are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, Princeton, N.J. 08541-6155.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL), Test of Written English (TWE), and Test of Spoken English (TSE) unless English is their first language. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, N.J. 08541-6155, U.S.A. The test is administered at various established centers abroad.

Application

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" should be completed and returned in duplicate as soon as possible. Applicants requesting financial aid must file a CAPSFAS form. Closing dates for receipt of applications by the several graduate departments are included with the application materials.

Applications for admission for the Spring Term must be filed by December 1. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

All applicants must arrange to forward, in duplicate, official transcripts of all undergraduate and graduate work. In addition, they must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom they have studied in their proposed area of study. Applicants who have engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom they have done graduate work.

Many departments also require the submission of samples of work as well as the materials described above. Applicants should consult departmental requirements in a later section of this catalog for enumeration of additional materials to be submitted.

All applications must be accompanied by the application fee, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applicants are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by the distinction of his or her previous record, particularly in the proposed area of study; the letters of recommendation submitted in support of the application; and his or her presumed adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the appropriate department or committee. The department or committee recommends to the dean of the Graduate School which applicants should be selected for admission and for financial aid. The dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results in April.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he or she must accept the offer of admission and awards, if any. If a student selected for admission indicates that he or she does not intend to accept the offer or fails to reply by the date specified, the admissions offer becomes void and another applicant may be accepted.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of financial aid (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment anytime through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in process at the time of acceptance. In addition, students who are accepted are required to complete and return a medical questionnaire and a health insurance form, which will be sent during the summer. Registration is conditional upon receipt by the University Health Office of these required forms.

If, after having been admitted, a student cannot attend, he or she should notify the dean of the Graduate School as soon as possible. If such students are to be admitted for a subsequent academic year, they must request reactivation of their applications at the appropriate time, and bring them up to date.

Foreign Students

Applicants who have been denied admission may reapply in a later year, particularly if they have had further training which would strengthen their applications or if they can submit additional letters of recommendation.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the department or committee administering the program of study.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he or she may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in March. The readmission application must be filed with the Graduate School Office.

Graduates of foreign colleges and universities who have the equivalent of an American bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance at Brandeis, which is authorized under Federal law to enroll nonimmigrant alien students.

Applications must be completed and returned by February 1 of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

Entrance Examinations. All applicants whose major language is not English must take the Test of English as a Foreign Language (TOEFL), Test of Written English (TWE), and Test of Spoken English (TSE); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may require this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, N.J. 08541-6155.

Financial Aid. Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expenses. Hence the students, when applying for admission, should indicate a means of financial support. At least \$6,000 in United States currency is necessary to cover living costs for the nine-month academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

Employment. The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. During the summer vacation, the Immigration Service may permit the student to obtain off-campus employment. Such permission must be guaranteed, however. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.

Requirements for the Degree

The following general requirements apply to the awarding of graduate degrees in all areas of study. For specific program requirements students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study. Departments may, at their option, require more than eight half-courses of graduate study. Departments offering master's programs may require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the master's degree, two copies must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or May 1 for a May degree.

The master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction twelve half-courses at the graduate level, and must meet the specific requirements for the degree as set forth under the Music Department. **Requirements for the M.F.A. Degree,** in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or May 1 for a May degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete the equivalent of sixteen half-courses at the graduate level and must meet the specific requirements for the degree outlined under Theater Arts. **Requirements for the M.F.A. Degree,** in a later section of this catalog. Students enrolled for specialization in dramatic writing must submit two copies of a play in final form in lieu of a thesis.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions, credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each department or committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates may be required to demonstrate proficiency in at least one foreign language. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred.

Students entering Brandeis University with no previous graduate work must earn the doctorate within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

Language Requirements

There is no University requirement for foreign language competency at either the master's or doctoral level.

Each department or program determines which languages are acceptable as satisfying its foreign language requirement. Some departments may not require foreign language competency, while others may set requirements which will vary within the subfields offered by those departments.

In departments where languages are required, students are expected to satisfy the requirement as soon as possible. Completion of this requirement at another university does not satisfy the Brandeis requirement.

For specific requirements of each department or program, consult the departmental listing in the following section of this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of the field at a level satisfactory to the department or committee, (b) has passed all departmental qualifying examinations, (c) has indicated a capacity for independent research of high quality, and (d) has satisfactorily completed all specific department or committee requirements for admission to candidacy may, at the recommendation of the department or committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the degree, the student must be admitted to candidacy at least one semester before it is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a February degree and no later than March 1 for a May degree of the academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's department or committee that the application be approved, the record will be reviewed by the Graduate Council which recommends the student to the University's Board of Trustees for the award of the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

When a student is ready to embark upon the preparation of a doctoral dissertation, a Dissertation Reading Committee of no less than three faculty members, at least one of whom is a tenured member of the faculty, will be appointed by the chairman of the student's department. The student's principal adviser will serve as the chairman of this committee. The Dissertation Reading Committee will guide the research for and preparation of the dissertation. When this committee certifies its approval of the dissertation to both the dean of the Graduate School and the chairman of the student's department, the latter, with the approval of the dean of the Graduate School, will appoint a Dissertation Examining Committee to preside over the student's Final Oral Examination and will notify the candidate of the time and place of the Final Oral Examination at least three weeks prior to the scheduled date of the examination. Two copies of the dissertation, as well as an abstract of no more than 350 words, should be submitted to the Dissertation Reading

Committee for approval. Style and format of dissertations are determined by the respective departments.

The dissertation, when approved by the readers, must then be deposited in the department office where it will be available for inspection by all interested members of the faculty for at least two weeks prior to the Final Oral Examination.

The department will publish in **The Brandeis Reporter** the time and place of the candidate's Final Oral Examination and the title of the doctoral dissertation. The Final Oral Examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members from other institutions.

The Dissertation Examining Committee, recommended by the department chairman and approved by the dean of the Graduate School, must be composed of a minimum of three faculty examiners, at least one of whom shall be a tenured member of the faculty and one of whom shall be from a graduate department outside the student's own, in a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his or her department or committee of responsibility for coverage prior to the examination.

A report, signed by the Dissertation Examining Committee, certifying the candidate's successful performance on the Final Oral Examination, will be submitted to the dean of the Graduate School.

Deposit and Publication of Dissertation

No later than the dates specified in the current Academic Calendar for February and May degrees, the candidate must deposit two copies of the finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other will be returned to the student, both bound. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 350 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under **Fees**, on the Final Doctoral Fee.

Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10 if registration is not completed at the time specified in the Academic Calendar.

Registration consists of payment of all fees for the semester and filing a Registration Card and other duly completed required forms. Program Cards are filed at a later date.

Program of Study

Before filing a Program Card, the student should plan a program of study in consultation with the chairman of the department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

Graduate students may not normally register for an undergraduate course (numbered below 100) for degree or residence credit unless they secure the signed approval of both the instructor of that course and their department chairman. The student must then petition the dean of the Graduate School for the desired credit, and must receive approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered at midyear. Students wishing to drop a full-year course at midyear must petition the dean of the Graduate School for permission, after receiving the written

approval of the instructor of the course and of the chairman of their department. Students may not register at midyear for a full-year course without the written approval of the instructor of the course and their department chairman.

Program Cards are filed approximately two weeks after the opening days of instruction (see Academic Calendar for specific date) and are considered to be final.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No courses may be audited without the permission of the instructor. Auditors may not take examinations or expect evaluation from the instructor. No credit is given for an audited course.

Change of Program

Only under unusual circumstances are students allowed to drop courses after filing their Program Cards. To do so, a Course Change Card is obtained from and returned to the Graduate School Registrar. Courses must be dropped no later than one week prior to the beginning of an examination period. Each course dropped is subject to a \$10 fee.

Registration in Terms of Time

Advanced students — those who have completed two full years of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere — may register in terms of time, subject to the signed approval of their department chairman. Their Program Cards must indicate that they are registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for advanced graduate students. Registration in terms of time frees students to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although students registering in terms of time will usually register for an advanced research or dissertation course. Their time will be spent in such research and reading as will be most beneficial to their development as scholars.

Absence from Examinations

Students who are absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No students may be excused from such examination unless for emergency or medical reasons, nor may they be excused if they were able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department who will decide whether a make-up examination shall be allowed, and who will notify the dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. Courses graded "non-credit" are those which carry no credit but which are required of the student. In these or research courses, if a letter grade cannot be given at the end of each semester or academic year, "Credit" or "No Credit" may be used.

"No Credit" and any letter grade below B-minus are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue to each student a report of grades and of degree requirements satisfactorily completed.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc." unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc." resolution of that grade to a letter grade must occur within six weeks of the beginning of the next semester. If a student requires additional time to settle an incomplete grade, he or she may petition the dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate level courses taken prior to matriculation at Brandeis University may not be counted toward fulfillment of the residence requirement for the Master of Arts degree, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. In that case, additional courses are designated to replace courses from which the student has been exempted.

A maximum of one term of residence credit for graduate level courses taken prior to matriculation may be counted toward fulfillment of the residence requirements for the Master of Fine Arts degree.

Students admitted to Ph.D. programs may file an application to have graduate level courses taken prior to matriculation counted toward fulfillment of residence requirements at this institution. A maximum of one year of residence credit may be granted.

Applicants for transfer credit will not necessarily be granted the credit requested. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of the area of study. In all cases, courses being transferred must carry a grade of "B" or better and must have been earned at an appropriately accredited institution.

After completing one term of residence at a full-time rate, or the equivalent at a part-time rate, students eligible to apply for transfer credit may do so. Forms are obtained at the Graduate School Office and are submitted to the student's department for its approval. The form is then forwarded to the dean of the Graduate School for final approval. The dean will advise the applicant of any action taken.

Credit for work at another institution taken concurrently with studies in the Graduate School must be approved for potential transfer credit by both the student's department and the dean of the Graduate School prior to registration for such courses. Such approval is granted only in unusual circumstances. Students who formally cross-register with Boston College, Boston University and/or Tufts University through the Consortium do not need prior approval.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirements when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition or the equivalent thereof in part-time study. Transfer credit may not be applied to residence requirements for the Master of Arts degree.

Master of Fine Arts

The minimum residence requirement for all students in Music is three semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study. Residence may be reduced by a maximum of one term with approved transfer credit.

The minimum residence requirement for all students in Theater Arts is four semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study. Residence may be reduced by a maximum of one term with approved transfer credit.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full tuition rate for each year, or the equivalent thereof in part-time study. A maximum of one year's approved transfer credit may be granted toward residence for the Ph.D. degree.

Full-Time Resident Students

A full-time student is one who devotes the entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of the department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by the department chairman, but no student may receive credit for, or be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate in any single academic year.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see page 12).

Part-Time Resident Students

A part-time student is one who devotes less than the entire time to a program of graduate work at Brandeis University. Students may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of the department chairman.

Students wishing to pursue part-time residence study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time study is not possible. Students receiving financial aid from the University, who wish to change their status from full-time to part-time residency, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

Fees and Expenses

Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

Properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counselorships. Special students who later wish to change their status to that of part-time or full-time students working for a degree must apply for admission as resident students. They must also file a special petition if they wish credit to be accepted for any courses taken at Brandeis as special students. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the dean of the Graduate School. Leaves of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leaves of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he or she must request such extension in writing before the leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

Graduate students who have completed residence requirements and who are not registered during the period in which they are completing degree requirements are considered Continuation Students. A student in this category is not eligible for a leave of absence, except for reason of ill health (see Fees, page 12).

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to the department chairman and to the dean of the Graduate School. Failure to comply may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the controller's office.

Discipline

The university establishes and administers rules of student conduct and reserves the right to suspend or dismiss students whose conduct warrants such action. The University will give due notice and, if requested, a hearing before the appropriate body to any student who may be suspended or dismissed from the University for other than academic reasons. Standards of conduct and procedures are published in the **Student Handbook**.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable. Neither the University nor any of its trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration will be refused the privilege of registration.

A student who defaults in the payment of indebtedness to the University shall be subject to suspension, dismissal, and refusal of a transfer of credits or issuance of a transcript.

Such indebtedness includes, but is not limited to, delinquency of a borrower in repaying a loan administered by the Student Loan Office, and the inability of that office to collect such a loan because the borrower has discharged the indebtedness through bankruptcy proceedings. If the student is a degree candidate, his or her name will be stricken from the rolls.

A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

Application Fee: \$25. Payable by all applicants for admission at the time the application for admission is submitted. It is not refundable. Checks and money orders should be made payable to Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1986-87 are as follows:

Full-time resident students: \$10,950 per year, or \$5,475 per term.

Part-time resident students:

<i>Per Term</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$4,106.25	\$8,212.50	Three-quarters
\$2,737.50	\$5,475.00	One-half
\$1,368.75	\$2,737.50	One-quarter

Special Students: \$1,370.00 per course per term.

In view of the constantly increasing costs of education, students may expect one or more tuition increases during their academic careers.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates.

Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$725. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a Program Card for full-time study, in terms of courses or in terms of time or any combination thereof, provided the department chairman approves of the program of study as being a full-time program and signs the Program Card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete residence requirements, but wishes to register for additional courses or take a fuller program of study, he or she shall be charged for the part-time program needed to complete residence, plus the post-residence fee.

Late Registration Fee: \$10. Payable for failure to complete registration at the time announced by the Graduate School Office.

Orientation Fee: \$5. A one-time fee payable by students entering for the first time.

Change-of-Program Fee: \$10. Payable by any graduate student who wishes to drop or add a course after filing Study Cards.

Incomplete Records Fee: \$25. Payable for failure to complete administrative requirements by date(s) specified in the Academic Calendar and/or Catalog (e.g., late filing of Health Examination Report, failure to register, etc.)

Continuation Fee: \$20. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leaves of absence.

Master's Fee: \$50. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who earns a degree in any semester following one in which he or she has not been in residence, shall pay the Master's Fee. The fee is chargeable only once.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the dissertation, publication of the abstract of the dissertation in *Dissertation Abstracts*, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation, one for use in the University Library, and one Xerox-printed copy in book form for the author. The Final Doctoral Fee covers the rental expenses for academic robes for graduation and the cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

Reinstatement Fee: \$10. Payable by a student who, after withdrawal, suspension or dismissal, has been reinstated with the consent of the dean of the Graduate School.

Transcript Fee: \$2. Students, former students, and graduates who request official transcripts of their records in the Graduate School are charged \$2 for each copy issued after the first one, which is free. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University. Transcripts will be issued only to those students whose university financial records are in order.

Diploma Fee: \$15. Payable by candidates for the M.A. and M.F.A. degrees.

Student Health Services Fee: \$200. Entitles the graduate student to use of the Health Services.

Student Insurance Fee: \$255. Payment of the Insurance Fee entitles the graduate student to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable. Student insurance is optional for Special Students.

Student-Spouse Insurance Fee: \$365. This fee provides 12-month coverage for student and spouse in the Health Insurance Program. The fee is payable at registration and no portion is refundable.

Dependent Insurance Coverage: Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$700. Special Students are not eligible for this plan.

Parking Fee: \$5-\$35. Payable annually at fall registration for privilege of parking an automobile on campus. Fee varies with assigned parking area.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws, he or she may petition the dean of the Graduate School for a partial refund of tuition in accordance with the following:

1. Tuition:

Withdrawal before the opening day of instruction: 100% of semester tuition. On or before the second Friday following the opening day of instruction: 75% of semester tuition.

On or before the fifth Friday following the opening day of instruction: 50% of semester tuition.

After the fifth Friday following the opening day of instruction: no refund.

2. Scholarship:

In the case of a scholarship student who withdraws, the student's account will be credited with the same proportion of the semester scholarship as charged for tuition: 25% if the student leaves on or before the second Friday; 50% on or before the fifth Friday; and, 100% thereafter. The balance of the scholarship will be cancelled.

Financial Assistance

To help students whose records indicate scholarly promise, the University makes available special scholarships and fellowships and a variety of awards and work opportunities. No student is eligible for aid without filing with the Graduate School Office a standard financial aid form (CAPSFAS). All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply annually for a renewal by filing the "Application for Financial Assistance."

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for undesirable conduct or poor academic standing.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. Ordinarily, no student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post-residence fee. Priority in making awards is given to full-time students and teaching assistants.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that will be used exclusively for remission of tuition fees. Full scholarships and partial scholarships are available. Scholarship students are liable for all but tuition charges.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless the award includes a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

Teaching assistantship appointments are made on the authority of the President of the University by the dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

Research Assistantships

Research assistantships are available in the science areas. First-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the department or the committee administering the graduate program.

Loans

Guaranteed Student Loan Program (GSLP). A student may be eligible for a guaranteed student loan if he or she meets the following requirements: (1) is accepted for enrollment or is attending Brandeis University and is in good standing as determined by the University; (2) is carrying at least one-half the normal full-time work load; (3) is a citizen or national of the United States or is in the United States for other than a temporary purpose; (4) can demonstrate need. An eligible student may be able to borrow up to \$5,000 in any academic year at a 9% interest rate, and does not have to begin repayment until six months after he/she ceases to be at least a half-time student. The total amount a student may borrow under the Guaranteed Student Loan Program, including both undergraduate and graduate school loans, may not exceed \$25,000. Special Students are normally ineligible for such loans.

Information and applications for this program are available from banks, savings and loan associations and credit unions.

Students who plan to borrow through one of the participating sources must have on file at the Graduate School Office a current Graduate and Professional Student Financial Aid Service form (CAPSFAS). Forms may be obtained at the Graduate School Office or from the Educational Testing Service, Princeton, N.J. 08541-6155.

Resident Counselorships

A limited number of positions is available for both married and unmarried men and women as counselors in the University residence halls. Applications may be obtained from the University Housing Office and should be returned no later than March 15. Appointments are made by the Director of University Housing on or about June 1.

Office of Student Employment

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.

Student Services

Housing

Brandeis University has a limited number of apartment units available for single and married graduate students. All apartments are within easy walking distance of the campus. These include efficiency, one and two bedroom *unfurnished* apartments as well as efficiency and one bedroom *furnished* apartments. Single students may rent a space in an apartment and request the Graduate Housing Office assign a roommate. The one bedroom apartments are particularly designed to allow use as two separate bedrooms with a common kitchen and bathroom. Early application for housing is encouraged.

Information, rental rates and copies of the housing contract may be obtained by writing to the Office of Residence Life and University Housing, Brandeis University, Waltham, Massachusetts 02254-9110.

In addition, the Graduate Housing Office maintains Off-Campus Housing Services (OCHS). OCHS has extensive listings of available housing in the area, a list of realtors who may be helpful in a search for housing, and descriptions and information about nearby neighborhoods and towns. OCHS does not serve as a real estate agent, but rather as a resource to help in locating housing.

Dining Facilities

Graduate students may sign meal contracts for varying numbers of meals or buy cash meal books. Arrangements for these contracts are made at the office of the Director of Food Services in Kutz Hall. A kosher kitchen is also maintained. Individual meals and light snacks may be purchased at Usdan Student Center.

Health Services

Because health and medical care are an integral part of the University experience, the University Health Services provides a program of comprehensive medical and emotional care. An optional Health Participation Fee entitles students to medical services available at Mailman House without additional charge during the academic year. This fee does not pay for off-campus medical consultations, dental care, medications, laboratory tests, drugs, x-rays, reusable supplies or admission to the University's hospital, Stoneham Infirmary, and students are responsible for these charges.

In addition, each student is required to have personal health insurance. The student may elect to participate in the Student Health Insurance Plan offered through the University, underwritten by Blue Cross-Blue Shield or may substitute membership in another plan. International students are required to have full United States or Canadian health insurance for themselves, their spouses and their children regardless of a national health insurance in their home country. They may enroll in the Student Health Insurance Program or may arrange alternate insurance with a company in the United States.

Both domestic and international students must provide documentation of health insurance coverage to University Health Services at the start of each academic year. Those who do not provide this information will be automatically enrolled in the Student Health Service Insurance Plan.

Except for limited day care facilities, the Health Services and the use of the Stoneham Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the college and graduate schools must submit a Health Examination Report completed by the family or personal physician prior to registration. In addition to information about previous health and details of the physical examination, evidence of immunization against tetanus, polio, measles, mumps and rubella are required. Since students may not register until the requirements have been satisfied, it is strongly recommended that the Health Examination Report be submitted by July 1.

The Student Health Insurance Plan is designed to defray expenses of those situations which are beyond the scope of the Health Services; for example, laboratory and x-ray examinations, as well as hospitalization for illnesses or accidents of a more serious nature. The Plan extends for a full calendar year commencing with the first day of the academic year. A detailed brochure of the services offered by the University Health Services as well as an outline of the details of the Plan is mailed to students annually. Students and parents are urged to read this brochure carefully and keep it for reference. This brochure includes a statement of patients' rights in Health Services.

Whereas situations not covered within the Health Services or by the Insurance Plan are infrequent, an awareness of these possibilities will lessen misunderstanding and disappointment.

In such instances, students and their parents are responsible for expenses which are not covered by the University's health program or its associated insurance policy. Similarly, students and their parents are responsible for expenses which are not covered by alternative insurance programs substituted for the Brandeis University Student Health Insurance Plan.

Psychological Counseling Center — Mailman House

The Psychological Counseling Center, a part of the University Health Services, is located in Mailman House. At the Center, a professionally trained staff provides a range of counseling and psychological services designed to enhance personal development of students and to assist those who are experiencing personal or emotional problems. Individual counseling and brief psychotherapy are available both to undergraduate and graduate students; group therapy is also available on a limited basis. Students can make an appointment to see a counselor by applying directly to the Counseling Center office on the second floor of Mailman House.

Office of International Programs

This office serves as the counseling center for students who come here from other countries. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U.S. Immigration Service to obtain working permits and documents necessary for extended periods of study, and in other technical matters which may arise (see page 7).

In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Fellowship Program, and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on University-accredited programs should consult this office.

Academic Schools, Research Centers and Institutes

Crown School of Graduate Studies in American Civilization

The school's primary objective is to support gifted students in their work toward a doctorate in the History of American Civilization. Crown Fellowships are granted occasionally to special students on the Brandeis campus from both the United States and abroad who are drawn from important facets of public life including the media and the foreign service.

Danielsen School of Philosophy, Ethics, and Religious Thought

The school includes the Department of Philosophy, which places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The advancement of philosophical thought in the context of contemporary issues is encouraged through scholarly and interdisciplinary approaches. One of several endowed professorships in the school is the Albert V. Danielsen Chair in Christian Thought.

Fierman School of Chemistry

The school of chemistry offers highly diverse and advanced activities in inorganic, organic and physical chemistry. The school has been aided by grants from the National Institutes of Health, National Science Foundation, Department of Energy, Research Corporation, and Petroleum Research Foundation. Research conducted under these agencies has been published in over 1,400 papers in leading professional journals.

Fisher School of Physics

The school of physics encompasses both theoretical and experimental physics on the graduate and undergraduate levels as well as a new program in Engineering Physics, and provides a setting for lectures and colloquia. Grants from agencies including the National Science Foundation and the Department of Energy support research programs in the Fisher School.

Kutz School of Biology

The school embodies the University's undergraduate and graduate biology departments. The curriculum is designed to teach at the molecular and cellular levels, and to present a comprehensive body of courses with special attention to current discoveries and experimentation. Students are encouraged to engage in original research and independent study. A major portion of the governmental, industrial, and private

research grants awarded to Brandeis is devoted to varied projects in biology and health sciences.

Lown School of Near Eastern and Judaic Studies

The school encompasses an intensive teaching and research program in all the main areas of Judaic Studies, the Ancient Near East and the Modern Middle East. In addition, the Lown School has programs which prepare students for Jewish communal service and programs of research in areas of direct concern to the American Jewish community.

The Department of Near Eastern and Judaic Studies is the primary teaching and research unit in the Lown School. In this department the university has assembled an unusual array of distinguished scholars who offer an extremely broad curriculum. A second unit in the Lown School is the Benjamin S. Hornstein Program in Jewish Communal Service which provides graduate education for students interested in professional careers in Jewish communal service and Jewish education. The school also includes the Center for Modern Jewish Studies which is devoted to the study of contemporary Jewish life. The center currently engages in research and teaching in three major areas: population studies, Jewish identity, and the family.

Benjamin Michtom School of Computer Science

This school encompasses a recently expanded, state-of-the-art, computer science program incorporating undergraduate and graduate instructional and internationally recognized research programs in the areas of computer science of theory, languages, systems, and artificial intelligence. The computer science department, interdisciplinary in setup, fosters links on campus between the Mathematics and Physics departments as well as the Cognitive Science Program.

Rosenstiel Basic Medical Sciences Research Center

The center is one of the nation's leading centers for research programs in the basic medical sciences embracing work in biochemistry, biology, chemistry, microbiology, physics, biophysics and immunology. Staff members are jointly appointed to the Brandeis faculty basic science departments. The center invites participation of distinguished scholars and medical scientists, offers hospitality to younger researchers at the undergraduate and fellowship level, sponsors symposia and colloquia and underwrites scholarly publications.

The Rosenstiel Basic Medical Sciences Research Center contains sophisticated scientific equipment and facilities. Through cooperative programming, both with departments at Brandeis and in the Boston area, the center has broadened the scope of basic medical science research offerings at Brandeis. Grants from such agencies as the National Science Foundation, National Institutes of Health, and American Cancer Society, among others, support research programs in the Rosenstiel Center.

The center sponsors the annual presentation of the Lewis S. Rosenstiel Award to recognize distinguished work in basic medical research.

Swig School of Political Science

The school, which includes the University's Department of Politics, offers a wide range of courses in American government, international relations, theory, methodology, and comparative politics.

Several endowed academic chairs in the school include the Harry S. Truman Chair in American Civilization; the Earl Warren Chair in American Constitutional Studies; the Christian A. Herter Chair in International Relations; and the Adlai E. Stevenson Chair in International Politics.

The Tauber Institute for the Study of European Jewry

The Tauber Institute for the Study of European Jewry seeks to study the history and culture of European Jewry in the modern period. It has a special interest in studying the causes, nature and consequences of the European Jewish catastrophe and seeks to explore them within the context of modern European diplomatic, intellectual, political and social history. The Tauber Institute for the Study of European Jewry is organized on a multi-disciplinary basis with the participation of scholars in history, Judaic studies, political science, sociology, comparative literature and other disciplines. The institute is primarily engaged in research. Its government includes a distinguished Board of Overseers which advises the director and works closely with the University. Members of the institute include fellows, faculty advisors, associates and graduate students.

Areas of Study and Courses — 1986-1987

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "aA" indicates a full course given in the Fall Term; "b" indicates a half course given in the Spring Term; "bB" indicates a full course given in the Spring Term; "aR" indicates a course given in the Spring Term; "bR," a course given in the Fall Term which is identical with an "a" or "b" course of the

same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

The University reserves the right to make any changes in the offerings without prior notice. Faculty and course listings are accurate as of June 1, 1986.

□ Course not offered for 1986-1987.

American Civilization

See History of American Civilization.

Anthropology

Objectives

The graduate program in anthropology, leading to the degree of Doctor of Philosophy, is designed to produce scholars who will broaden our knowledge of culture and society. Admission is limited to students whose primary interests lie within the fields of social and cultural anthropology or archaeology. Most graduates of the program accept appointments at colleges and universities, although a number take employment in government, private institutions or foundations. Intensive training for independent research is stressed, with particular emphasis on comparative studies and fieldwork.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his or her residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Professor
George L. Cowgill,
Chair;
Mathematical and computer methods in archaeology. Mesoamerican civilizations. Origins of early states. Population anthropology.

Professor
David Kaplan;
Economics. Method and theory. Peasant cultures. Middle America.

Associate Professor
Robert C. Hunt;
Social anthropology. Modernization. Irrigation agriculture. Mesoamerica.

Associate Professor
Judith T. Irvine;
Ethnography of communication. Linguistics. Social stratification. Africa.

Associate Professor
David E. Jacobson;
Social anthropology. Medical anthropology. Support systems. U.S.A. Africa.

Associate Professor
Benson Saler;
Comparative religion and folk philosophies. Psychological anthropology. Mesoamerica. South America. Pastoral peoples.

Associate Professor
Robert N. Zeitlin;
Sociocultural evolution. Prehistoric exchange. Pre-state societies. Archaeological method and theory. Mesoamerica.

Assistant Professor
D. Neil Gomberg;
Physical anthropology. Comparative anatomy. Primate studies. Human evolution.

Assistant Professor
Pierre-Yves Jacopin;
Myth and ritual. Social organization. Symbolic anthropology. Cross-cultural child psychology. Egalitarian societies. South America. Europe.

Assistant Professor
Judith F. Zeitlin;
Cultural ecology. Archaeological method and theory. Mesoamerica. Ethnohistory.

Lecturer
David W. Murray;
Social and cultural anthropology. Symbolic anthropology. Linguistics. North American Indians.

Lecturer
Charles A. Ziegler;
Industrial and applied anthropology.

Research Associates

George N. Appell;
Social anthropology. Southeast Asia.

Clemency Coggins;
Prehistoric art and archaeology of Mesoamerica, lower Central America and Peru.

Michael Folsom;
Industrial archaeology. New England.

Wilma Wetterstrom;
Archaeology. Cultural ecology. Ethnobotany and nutrition.

Degree Requirements

Master of Arts

Ordinarily students are admitted for the doctoral program only. However, the Master of Arts degree in anthropology will be awarded to those students who have successfully fulfilled the minimum residence requirements set by the Graduate School and have met the following requirements: 1) Of the eight half-courses to be completed satisfactorily, one must be the first segment of the linguistics sequence, and one must be either of the special graduate courses in archaeology or physical anthropology; 2) If the student will not be continuing toward a Ph.D., he or she must also pass an M.A. qualifying examination, must demonstrate reading proficiency in a foreign language, and must submit an acceptable master's thesis (for doctoral students the Specialist Essay, described below, may substitute for the thesis component in the awarding of an M.A.).

Qualifying Examination.

University, for which formal cross-registration arrangements are in effect. In any case, a maximum of one year of residence credit is allowed by the Graduate School for work completed elsewhere.

At the end of sixteen half-courses students take a General Examination which tests for overall mastery of the subject matter. Upon passing the General Examination, work begins on a Specialist Essay, normally focused on theoretical and/or topical issues of relevance to the forthcoming dissertation. The purpose of the Specialist Essay is to demonstrate a capacity for independent research of high quality. By the end of the third year of study, the essay should be complete, language requirements satisfied, and a proposal for dissertation research drawn up.

Language Requirement.

A reading knowledge of at least one foreign language must be demonstrated by examination and by writing a research paper or dissertation in which sources in the chosen language contribute to the research. The examination part of this requirement must be passed before the student may be admitted to candidacy for the Ph.D.

Doctor of Philosophy Program of Study.

Flexibility of curriculum enables the student to organize a program of study around his or her particular anthropological interests. At the same time, the doctoral program is structured so that a broad familiarity with other aspects of the discipline is achieved.

Summer Training Program.

Contingent upon the availability of funding, a program of fieldwork under faculty supervision is carried out during the summer following a student's first year of residence.

At the outset an adviser is assigned each matriculant, but by the end of the second semester of study a student is expected to recruit two members of the faculty for a permanent advisory committee. In soliciting potential committee members, the student should be guided by interest and specialization. Once established, the committee is responsible, through regular meetings and informal consultation, for 1) guiding the student in the selection of suitable courses, 2) providing advice in the formulation of a dissertation research project, and 3) supervising the student's progress through the program.

Admission to Candidacy.

A student is admitted to candidacy for the Ph.D. upon satisfactory completion of 1) sixteen half-courses, including all the required courses, 2) the General Examination in anthropology, 3) a reading examination in a foreign language, and 4) the Specialist Essay.

Dissertation Research.

As soon as possible after admission to candidacy, the student should begin at least a full year of research consisting of fieldwork and/or laboratory analysis. In exceptional cases library research may be substituted. This research forms the basis for a doctoral dissertation.

With respect to formal course requirements, all students not exempted by virtue of previous graduate training must complete the four core courses in social organization and anthropological theory, a special one-semester seminar in archaeology, another in physical anthropology, and a two-semester course sequence in anthropological linguistics. Students concentrating in archaeology may substitute the one-semester course for the linguistics (Linguistics 102) requirement. Through course work and outside reading it is expected that students will attain a high degree of scholarly competence in at least one culture area and one topical field study.

Dissertation and Defense.

The department will recommend to the Dean of the Graduate School that a Ph.D. be awarded the candidate upon formal acceptance of a dissertation and after its successful defense in a Final Oral Examination. Details of the regulations for certifying approval of the dissertation and for the Final Oral Examination are found in earlier pages of this catalog.

The department may, at its discretion, grant a student transfer credit for graduate courses completed with a "B" grade or better at another accredited institution. Requests for transfer credit will not be considered, however, until at least one semester of study has been completed at Brandeis. Prior approval is not needed for courses taken at Boston College, Boston University and Tufts

Courses of Instruction

Anthropology 101b. Medical Anthropology	The purpose of this course is to study the relationship between stress and mental health and physical well-being. It will look at the connection between stressful experiences and the "natural" support systems for those undergoing transitions such as becoming a parent, losing a job, getting divorced, entering college, and bereavement. The conditions which influence the availability and use of support will be considered. Important aspects of this course will be to discuss the concepts of stress and support and to review research concerning relationships between crises, support and coping behavior.	Anthropology 107a. Human Disease Ecology Ecology	This course is a general treatment of medical ecology. Topics include a basic introduction to epidemiology, disease evolution, disease and development, and malnutrition and disease. Special attention will be paid throughout the course to the interaction of culture and disease, and several examples of changing patterns of disease associated with cultural change will be examined in detail.
	Mr. Jacobson		Mr. Gomborg
Anthropology 102a. An Anthropological Introduction to Language	<input type="checkbox"/> Not offered 1986-1987 A general introduction to anthropological perspectives on language. Topics will include: the organization of language as a communicative system; language in human evolution; linguistic approaches to cultural meaning and world-view; historical perspectives on language (language change, history and pre-history).	Anthropology 108b. Greek Mythology	Initiation into the fantastic world of Greek mythology. Studying a wide range of myths, many unfamiliar and not in literary sources, this course will introduce procedural and conceptual tools to reveal their symbolic meaning. The myths will be situated in their proper cultural, aesthetic, and historical contexts. The course ends with the contribution of Greeks to the end of mythological thought and the birth of scientific thought.
			Mr. Jacopin
Anthropology 102b. Social and Cultural Aspects of Linguistic Analysis	<input type="checkbox"/> Not offered 1986-1987 Advanced topics in anthropological linguistics. The course will focus on three areas: 1) linguistics fieldwork and the analysis of unfamiliar language; 2) linguistic variation and social structure; 3) current issues in semantics and pragmatics (the relation between meaning and use in cross-cultural perspective).	Anthropology 110a. Introduction to Human Evolution	<input type="checkbox"/> Not offered 1986-1987
		Anthropology 110b. Introduction to Human Evolution	<input type="checkbox"/> Not offered 1986-1987
Anthropology 103b. Language, Society and Culture	<input type="checkbox"/> Not offered 1986-1987 A comparative study of social and cultural aspects of language. Topics to be explored include: what kinds of social groups contrast in their use of language? How does a person's speech contribute to the impression he/she makes on other people? How is conversation organized, and to what purpose? Students conduct a fieldwork project on speech in their own social milieu.	Anthropology 111a. Introduction to Primate Studies	<input type="checkbox"/> Not offered 1986-1987 An introduction to the study of non-human primates paying special attention to studies of primates in their natural habitat. Topics focus primarily on the relationships of elements of an animal's feeding, social/maintenance and locomotor behavior to selected aspects of its environment.
		Anthropology 112b. Evolution and Natural Selection	<input type="checkbox"/> Not offered 1986-1987
Anthropology 105aR. Symbol, Myth and Ritual	<input type="checkbox"/> Not offered 1986-1987 Though the mythology of Ancient Greece is perhaps the best known, in fact every culture has its myths. Beginning with the study of mythologies in small-scale and classless societies, where they are the only social expression of reality, the course reveals the characteristics and the mechanisms of mythical thought and introduces a way of understanding myths. This method is then used to examine the mythological system of other and more complex societies. Special emphasis is given to the elucidation of mythical symbolism and on the necessity of relating myths to rituals. The course ends with the comparison of the religion of several social systems.	Anthropology 113a. Human Variation	<input type="checkbox"/> Not offered 1986-1987 An introduction to human biological variation. Differences between individuals and populations within human species in biological characteristics (body build, blood groups, skin color) will be analyzed using an adaptive approach. The utility of the racial model to understanding human variation will be evaluated and compared to that of other approaches. Several politically and socially controversial topics relating to human variation (race and I.Q., sociobiology) will be discussed in the semester.

Anthropology 115a. Biocultural Adaptation	<p>□ Not offered 1986-1987</p> <p>An advanced course dealing with human adaptation with particular emphasis on the interaction of elements of the biological and cultural adaptive system in human societies.</p>	Anthropology 124b. Archaeology of the Aegean and Near East II	<p>□ Not offered 1986-1987</p> <p>See CLORS 100b.</p>
Anthropology 116a. Human Osteology	<p>This course is an introduction to human musculo-skeletal anatomy. After learning the names and locations of the major bones and muscle groups, the manner in which these anatomical structures interact to produce movement will be examined. Movements at each of the major joints of the human body will be discussed and integrated into an analysis of human locomotion and posture.</p> <p>Mr. Gomberg</p>	Anthropology 125b. Investigations in an Unfamiliar Language	<p>□ Not offered 1986-1987</p>
Anthropology 117a. The Archaeology of Cyprus I	<p>□ Not offered 1986-1987</p> <p>See CLORS 116a.</p>	Anthropology 125bR. Investigations in an Unfamiliar Language	<p>See LING 122bR.</p> <p>Mr. Prince</p>
Anthropology 117b. The Archaeology of Cyprus II	<p>□ Not offered 1986-1987</p> <p>See CLORS 116b.</p>	Anthropology 126a. Kinship	<p>□ Not offered 1986-1987</p>
Anthropology 118b. History of Anthropological Theory	<p>□ Not offered 1986-1987</p>	Anthropology 128b. The Provisioning of Cities	<p>That cities must be provisioned with food, water and fuel is self-evident: how they do it is not. Successful and sustained provisioning is a complex system of ecological, political, economic social and cultural constraints and implications. In this course specific attention is paid to agricultural productivity, the technology of storage and transport, urban-rural terms of trade, and the very complex mixtures of distribution systems in cities. The mutual relevance of the various problems and their solutions is stressed. We will use concepts from several disciplines, and data from many times and places, including classical Rome, West Africa, colonial Mexico and modern times.</p> <p>Mr. Hunt</p>
Anthropology 119aR. Conquest and Colonialism in Native Latin America	<p>An often overlooked topic in Latin American studies is an examination of the impact that Spanish and Portuguese colonialism has had on the inhabitants of the Americas. Within a hundred years after the Conquest, the once dense Indian populations had been reduced by as much as 90% and great imperial states like those of the Aztecs and Incas were transformed into a subjugated peasantry. In this course we will trace the historical development of post-Conquest Indian society, from the policies and cultural institutions of Iberian colonialism through the complex ethnic and economic interactions of different native groups within the modern nation states of lowland South America living on the last frontier of colonialism.</p> <p>Ms. Zeitlin</p>	Anthropology 129b. The Evolution of Culture and Society	<p>□ Not offered 1986-1987</p> <p>Past and present ideas about evolution are examined and their utility for explaining social and cultural changes are evaluated. Examples illustrating the use of evolutionary models will be drawn from anthropological studies in both recent and ancient times.</p>
Anthropology 120b. The Anthropology of Law	<p>□ Not offered 1986-1987</p> <p>See LEGAL STUDIES 102b.</p>	Anthropology 131. The Archaeology of Anatolia	<p>□ Not offered 1986-1987</p> <p>See CLORS 122.</p>
Anthropology 123a. Directions and Issues in Archaeology	<p>□ Not offered 1986-1987</p>	Anthropology 133a. Tradition and the Contemporary Experience in Black Africa	<p>□ Not offered 1986-1987</p> <p>This course explores the variety and richness of indigenous African social and cultural forms, such as the organization of the family; indigenous political systems; rank and slavery; traditional economies; ideas about magic, witchcraft, and religion; and the arts. Precolonial ways of life are compared with the transformations in the colonial and post-colonial periods. A major goal will be to assess the impact of the colonial encounter on the daily-life experience of Africans today.</p>
Anthropology 124a. Archaeology of the Aegean and Near East I	<p>□ Not offered 1986-1987</p> <p>See CLORS 100a.</p>		

Anthropology 136b. Magic, Witchcraft and Religion	An introduction to various attempts to characterize magic, witchcraft and religion and to theorize about their roles in human life. Among the questions discussed are these: What is usually meant by magic and why do people sometimes engage in practices that we label as magical? What roles do ideas about witchcraft and accusations of witchcraft sometimes play in social life and how do we account for those ideas and accusations? And what are some of the problems attendant on defining religion and on attempting to theorize about its origins and functions?	Anthropology 151b. Social Organization II	A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students.
Mr. Saler		Anthropology 152b. Comparative Political Economy	□ Not offered 1986-1987
Anthropology 141b. North American Indians	A survey of the peoples and cultures of aboriginal North America.	Anthropology 153a. Primitive Art	□ Not offered 1986-1987
Mr. Murray		Anthropology 154bR. Selected Topics in Comparative Religion: Seminal Works in the Study of Religion	An exploration of world view and ritual both in "world" or "historical" faiths (such as Buddhism and Islam) and in so-called "primitive" societies with reference to theories concerning the origins and functions of religion.
Anthropology 145a. Seminar in Mesoamerican Archaeology and Ethnohistory	□ Not offered 1986-1987	Mr. Saler	
Anthropology 146aR. Landscapes, Life and Climates of the Past	An introduction to prehistoric human ecology, the course examines how people in the past interacted with the natural world and how it in turn shaped them. Using case studies, the course surveys the methods archaeologists use for reconstructing climates, flora, fauna and land formations. Most class sessions will be run as workshops or laboratories.	Anthropology 155b. Psychological Anthropology	□ Not offered 1986-1987
Ms. Wetterstrom		Anthropology 158a. Urban Anthropology	Comparative study of strategies used in coping with the complexity and potential danger of urban life. Attention will also be given to analyzing and evaluating the theories, methods and data anthropologists and others use in their studies of urban social organizations.
Anthropology 147b. The Rise of Mesoamerican Civilization	□ Not offered 1986-1987	Mr. Jacobson	
Anthropology 148a. Rise, Function and Fall of Early Civilizations: Concepts and Explanations	□ Not offered 1986-1987	Anthropology 158b. Selected Topics in Urban Anthropology	□ Not offered 1986-1987
Anthropology 149. The Archaeology of the Aegean	□ Not offered 1986-1987 See CLORS 119.	Anthropology 161bR. Culture and Cognition	What relationship is there between cognitive processes and cultural systems? Do cultural differences involve or affect people's perception, classification process, memory or modes of problem-solving? Do they affect the course of cognitive development? This course will examine cross-cultural research in psychology and anthropology that attempts to answer these questions. Special attention will be given to the role of language, to the relation between magic and science, and the cognitive effects of literacy.
Anthropology 150a. Spatial Analysis in Archaeology	□ Not offered 1986-1987 Techniques for identification of within—and between-site spatial patterns in archaeological materials, and approaches to their sociocultural interpretation. Substantial archaeological background is expected of students.	Mr. Murray	
Anthropology 151a. Social Organization I	Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis.	Anthropology 162a. Anthropology and Psychoanalysis	□ Not offered 1986-1987 Survey of psychoanalytic theories advanced by Freud, Bettelheim, Roheim, Devereaux and others regarding the idea of the unconscious. Using the experience of psychoanalytic therapy as our frame of reference, we will deal cross-culturally with infancy, initiation rites, funerals and myths. What is the contribution of psychoanalysis to an understanding of the relationship between the individual and society?
Mr. Hunt			

Anthropology 164b. Corporate Cultures	The course examines the structure and internal dynamics of the modern corporation with special emphasis on corporate culture, i.e., the system of company-specific beliefs, values, norms, that underlies work-related behavior of members. Formal and informal aspects of corporate organization will be described and the developmental trajectory of the firm from start-up to maturity will be correlated with changes in corporate culture.	Anthropology 188a. Materials in Ancient Societies: Metals	A seminar and laboratory course meeting at MIT. Staff
	Mr. Ziegler	Anthropology 188b. Materials in Ancient Societies	□ Not offered 1986-1987
Anthropology 166aR. The Nature of Human Nature	This course will deal with various theories of human nature and the evidence for such theories. It will explore the way in which theories of the nature of man have figured in interpretations of culture. The course addresses the question: to what extent is culture the expression of nature and to what extent does it depart from nature?	Anthropology 198a. Waltham Community Studies Seminar I	See AMSTD 198a. Mr. Folsom
	Mr. Saler	Anthropology 198b. Waltham Community Studies Seminar II	See AMSTD 198b. Mr. Folsom
Anthropology 170a. Peasant Cultures: Past and Present	□ Not offered 1986-1987	Primarily for graduate students.	
Anthropology 171a. The Comparative Method	□ Not offered 1986-1987	Anthropology 222-256. Readings and Research Courses	
Anthropology 175a. Pro-Seminar in Anthropological Theory	□ Not offered 1986-1987 Analysis of representative classics in anthropology.	222a and b. Readings and Research on the World Before Civilization	Mr. R. Zeitlin
Anthropology 175b. Pro-Seminar in Method in Cultural Anthropology	□ Not offered 1986-1987 The development of anthropological theory, major present-day trends and their relation to problems of research.	226a and b. Readings and Research in Archaeology	Staff
Anthropology 186a. Mathematics and Computers in Archaeological Data Analysis I	A year long graduate lecture and laboratory course on the uses of mathematics, statistics and computer technology in the management and analysis of archaeological data. Topics include file processing, simple programming, statistical packages, basic descriptive statistics, research design and sampling, classification, seriation, spatial analysis, introductions to multivariate methods and to simulation, and uses and misuses of all these approaches for archaeological interpretation and theory building. Preference given to students with some background in computers, statistics, and/or college mathematics.	227a and b. Readings and Research in Linguistic Anthropology	Ms. Irvine
	Mr. Cowgill	228a and b. Advanced Readings in Method and Theory	Mr. Kaplan
Anthropology 186b. Mathematics and Computers in Archaeological Data Analysis II	A continuation of Anthropology 186a. Mr. Cowgill	229a and b. Guided Comparative and Historical Research	Mr. Hunt
		230a and b. Readings and Research on Culture of Hunters and Gatherers	Mr. Jacopin
		231a and b. Readings in Cognitive Culture	Mr. Saler
		235a and b. Readings and Research in Latin American Cultures	Mr. Hunt

237a and b. Readings and Research in African Cultures	Ms. Irvine	Anthropology 300a and b. Seminar in Anthropological Field Work	□ Not offered 1986-1987 Staff
238a and b. Readings and Research in Urban Anthropology	Mr. Jacobson	Anthropology 302. Summer Research Training	Field work for three months during the summer under the supervision of a member of the staff. Staff
239a and b. Readings and Research in North American Indians	Mr. Murray		
240a and b. Readings and Research in Medical Anthropology	Mr. Jacobson	Anthropology 304a and b. Readings and Research in Anthropological Field Methods	Staff
241a and b. Readings and Research in New World Ethnohistory	Ms. J. Zeitlin	Anthropology 305a and b. Anthropology Colloquium	Staff
242a and b. Readings in the Anthropology of Art	Mr. Jacopin		
245a and b. Readings and Research in Physical Anthropology	Mr. Gomberg	Anthropology 400-414. Dissertation Research	Independent research for the Ph.D. degree. 401. Mr. Cowgill 402. Mr. Jacobson 403. Mr. Hunt 405. Ms. Irvine 407. Mr. Kaplan 409. Mr. Saler 411. Ms. J. Zeitlin 412. Mr. R. Zeitlin 413. Mr. Gomberg 414. Mr. Jacopin
253a and b. Readings and Research in Economic Anthropology	Mr. Kaplan		
254a and b. Readings and Research in Southeast Asian Ethnography	Mr. Appell		
256a and b. Readings and Research in Religion	Mr. Saler		

Biochemistry

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip students with a broad understanding of the chemistry involved in biological processes and to train them to carry out independent original research. Although students will be primarily responsible for a comprehensive understanding of biochemical phenomena, they will be encouraged to acquaint themselves with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars, as well as one advanced course in chemistry or biology. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include metabolic regulation in normal and also tumor tissues, enzymology, immunochemistry, molecular

biology, molecular pharmacology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, microbial metabolism, organic biochemistry, membrane transport and energy coupling mechanisms, application of NMR to biochemical problems, biochemistry of muscle, and chromosome structure.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply here. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. It is strongly suggested that the applicant take one of the advanced sections (preferably chemistry or biology) of this examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry.

Faculty

Professor Robert H. Abeles:
Chair:
Mechanism of enzyme action. Design of highly specific enzyme inactivators. Design of inhibitors with potential pharmacological significance. Mechanism of drug action.

Professor Gerald D. Fasman:
Conformation of biological macromolecules. Chromatin structure, protein-DNA interactions. Protein models; synthesis and conformational studies of polyamino acids.

Professor Thomas C. Hollocher, Jr.:
Role and mechanism of action of oxidation-reduction enzymes. Mechanism, enzymology and pathway of nitrogen in nitrification.

Professor William P. Jencks:
Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry. Mechanisms of conversion of chemical energy into osmotic and mechanical work.

Professor Lawrence Levine:
Immunochimistry. Antibodies as analytical reagents for measuring pharmacologically important molecules. Mechanisms of arachidonic acid metabolism by cells in culture.

Professor Irwin B. Levitan:
Neurobiology. Neurobiochemistry. Regulation of neuronal membrane properties.

Professor John M. Lowenstein:
Role of phospholipids in hormone action. Regulation of metabolic pathways. Regulation and function of the purine nucleotide cycle; regulation of adenosine production in heart.

Professor Susan Lowey:
Structure and function of myofibrillar proteins and their relation to the muscle cell. Techniques will include physical chemistry, protein chemistry, fluorescence and electron microscopy.

Professor Christopher Miller:
Cellular physiology and biophysics. Membrane transport and mechanisms of electrical excitation.

Professor Alfred C. Redfield:
Magnetic resonance in biopolymers. Physical biochemistry.

Professor Robert F. Schleif:
Molecular genetics. Mechanism of gene regulation as studied by genetic, physiological and physical chemical means.

Professor Serge N. Timasheff:
Physical chemistry of proteins, in particular, structure in solution and self-associations; self-assembling systems; ligand-mediated interactions; macromolecular properties of biological polymers.

Professor Helen Van Vunakis:
Interaction of hallucinogenic, narcotic and carcinogenic compounds with specific antibodies and natural receptors. Nicotine metabolism and physiological effects.

Professor Pieter Wensink:
Molecular biology. Gene expression during development of higher organisms. The physical arrangement of genes within the DNA and the chromosomes of higher organisms.

Associate Professor William T. Murakami:
Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of polyoma viruses.

Assistant Professor Michael J. Newman:
Regulation of growth and transformation of mammalian cells. Mechanisms of action of normal and transforming growth factors. Mechanism and regulation of solute transport to bacterial and mammalian cells.

Assistant Professor Michael Wormington:
Molecular biology. Developmental regulation of eukaryotic gene expression. Control of mitochondrial transcription.

Degree Requirements

Doctor of Philosophy

Program of Study.

Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, physical biochemistry and biochemical research problems, and four of the biochemistry seminars.

Financial Support.

Graduate students currently receive financial support for a period of four years. Support for the fifth year or beyond is arranged with the research supervisor. The initial four-year support is contingent upon teaching for a maximum of two semesters. Teaching does not require laboratory supervision.

Language Requirements.

There is no foreign language requirement for the Ph.D. degree.

Qualifying Examinations.

An oral qualifying examination must be taken generally at the beginning of the second year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization, and one will be an original proposition put forth by the student for a research problem in his or her area of interest (this is not necessarily a problem upon which he or she will carry out research).

In addition, the student will have an opportunity to demonstrate general knowledge of biochemistry in a series of three area examinations: physical biochemistry and

macromolecules, metabolism and enzymology, and molecular biology. Students are expected to have taken three examinations by the end of the third year; two of these must be taken by the end of the second year. This general knowledge outside the student's own field of specialization must be demonstrated to the satisfaction of an advisory committee of four Department faculty members.

At this time it will be decided whether a student will continue working towards the Ph.D. degree or a Master of Arts degree.

Admission to Candidacy.

At some time before the second semester of their third year, students will present to a committee of four members of the Department a summary of their research accomplished to date, including the most significant experimental data and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Doctor of Philosophy degree. After completion of the research report and the three area examinations at a level satisfactory for the Ph.D. degree, the student will be admitted to candidacy.

Dissertation and Defense.

A dissertation will be required which summarizes the results of an original investigation of an approved subject and which demonstrates the competence of the candidate in independent research. This dissertation will be defended in a Final Oral Examination.

Courses of Instruction

Biochemistry 100a. Introduction to Biochemistry	Chemistry, reaction and metabolism of biologically important compounds. Formation and utilization of "energy-rich" compounds. Introduction to enzyme mechanisms. An attempt will be made to interrelate and compare basic biochemical and chemical processes. Metabolic regulation. Prerequisite: Chemistry 25a and b. Section 1: Ms. Lowey and Mr. Newman Section 2: Messrs. Abeles and Jencks	Biochemistry 106 Regulation of Cellular Growth and Differentiation	This course will examine the biochemical mechanism involved in the regulation of cellular proliferation and differentiation. We will discuss the role of extracellular growth factors, and the mechanisms of signal transduction in the control of the cell cycle. The genetic basis of differentiation, including the role of oncogenes in normal development and neoplasts will be addressed. Messrs. Newmand and Wormington
Biochemistry 100aR. Introductory Biochemistry	See Biochemistry 100a. Mr. Murakami	Biochemistry 142b. Neurochemistry and Cellular Neurobiology	This course will present the basic concepts of neurochemistry and neurobiology. Topics to be covered will include the cellular anatomy of the nervous system, intercellular communication between neurons, transmitter biochemistry, ion channels and pumps, membrane structure and function, molecular mechanisms of transduction of electrical signals, and the neurochemistry of higher functions and mental disorders. Mr. Lisman
Biochemistry 101a. Advanced Biochemistry I	A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones, and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids. Regulated enzymes and regulation of metabolism. Prerequisite: Chemistry 25a and b, Biochemistry 100a or their equivalent. Messrs. Abeles, Jencks, Hollocher	Biochemistry 200. Biochemistry Techniques	Prerequisite: Biochemistry 101. May be taken concurrently. Mr. Jencks and Staff
Biochemistry 101b. Advanced Biochemistry I	A continuation of Biochemistry 101a. Messrs. Abeles, Jencks, Miller and Lowenstein	Biochemistry 202b. Chemistry of Enzyme-Catalyzed Reactions	<input type="checkbox"/> Not offered 1986-1987 This course will deal with reaction mechanisms of catalysis in aqueous solution, some of which are relevant to enzymic catalysis.
Biochemistry 103a. Advanced Molecular Biology	The fundamental principles of molecular biology will be stressed with respect to nucleic acid biosynthesis, structure, and physiological involvement. In addition, a description of events dealing with control of genetic information will be outlined. Mr. Schleif	Seminars	
Biochemistry 104b. Introduction to Physical Biochemistry	Discussion of physical methods; molecular interactions; solvent effects; principles of folding; structural and conformation analyses by various spectroscopic and x-ray techniques. Mr. Fasman	Biochemistry 214a. Molecular Basis for Contractility in Muscle and Non- Muscle Cells	<input type="checkbox"/> Not offered 1986-1987
		Biochemistry 219b. Mechanism of Enzyme Action	Messrs. Abeles and Jencks
		Biochemistry 220a. Molecular Pharmacology	Mr. Levitan
		Biochemistry 221b. Metabolic Regulation with Special Reference to Hormonal Regulation	<input type="checkbox"/> Not offered 1986-1987

Biochemistry 228b. **Thermodynamic Linkages in Protein Interactions** □ Not offered 1986-1987

Biochemistry 231a. **Ion Channel Proteins** □ Not offered 1986-1987

Biochemistry 233a. **Membrane Proteins** Mr. Fasman

Biochemistry 401-420. Biochemical Research Problems	Independent research for the Ph.D. degree.	
	401. Mr. Jencks	411. Ms. Van Vunakis
	402. Mr. Levine	413. Mr. Hollocher
	404. Mr. Timasheff	414. Mr. Murakami
	405. Mr. Abeles	415. Mr. Schleif
	406. Mr. Fasman	416. Mr. Redfield
	407. Mr. Lowenstein	417. Mr. Wormington
	408. Mr. Wensink	418. Mr. Miller
	409. Ms. Lowey	419. Mr. Levitan
		420. Mr. Newman

**Journal Club,
Colloquia, and
Research Clubs**

In addition to the formal courses announced above, all graduate students are encouraged to participate in the Department's Journal Club and colloquia.

The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, at which recent publications are discussed. Colloquia are general meetings of the Department in which both speakers from the Department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the Department.

Biology

Objectives

The graduate program in biology is designed to encourage and train students to develop their abilities to carry out independent and original research. Each student is expected to become familiar with the major areas of research currently being conducted within the department: molecular genetics and development, neurobiology, immunology, and cell and structural biology. In addition to a flexible curriculum of courses, designed for each student's specific program, entering students begin a series of laboratory rotations to acquaint themselves with current research techniques and to explore possible areas of thesis research. Students also are given opportunities to develop their confidence and ability to make oral presentations, beginning in the first year with a proseminar designed to discuss research methodology and continuing through a series of journal clubs. Each advanced student also presents an annual summary of his or her own research to the department. Research leading to a Ph.D. degree is carried out under the direction of one of the 21 members of the biology faculty. Areas of research include: molecular biology of the regulation of gene expression, especially during development; chromosome structure and chromosomal rearrangements; developmental genetics; behavior genetics and neural development; biophysics of single nerve cells; integration of neural function; immunogenetics; immune cell differentiation and development; molecular biology of the immune system; regulation of muscle contraction; molecular and cell architecture; organization of subcellular structures. A complete list of faculty research interests is available from the Department of Biology.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, graduate students will report to the temporary graduate student advisor who will assist the student with formal entry into the department and later with their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor David J. DeRosier (Rosenstiel Center), Chair: Structural studies of macromolecular complexes. Electron microscopy and image analysis applied to actin and actin-containing assemblies, bacterial flagella, and multienzyme complexes.

Professor Carolyn Cohen (Rosenstiel Center): Structural molecular biology.

Professor Herman T. Epstein: Developmental changes in the brain in relation to learning in man and mouse.

Professor Chandler M. Fulton: Cell differentiation and selective gene expression in eucaryotic cells. Morphogenesis of cell shape and of cell organelles, especially flagella.

Professor Martin Gibbs (Photobiology Institute): Photosynthesis and plant physiology.

Professor James E. Haber (Rosenstiel Center): Genetic and molecular biology of yeast *Saccharomyces cerevisiae*. Mechanism of recombination; chromosomal rearrangements; control of meiosis and cell type.

Professor Jeffrey C. Hall: Genetic and histochemical mosaic analysis of behavior mutants of *Drosophila melanogaster*.

Professor Harlyn O. Halvorson (Director, Rosenstiel Center): Developmental changes in microorganisms. Control of macromolecular synthesis during the cell cycle and during sporulation in bacillus.

Professor Kenneth C. Hayes (Director, Foster Biomedical Research Laboratory): Comparative nutritional pathophysiology in man and animals. Lipoprotein metabolism and atherogenesis, cholelithiasis.

Professor Hugh Huxley: Structure and function of muscle.

Professor Attila O. Klein: Regulation of development in higher plants by light. Control of growth, organelle development and macromolecular synthesis in the leaf.

Professor Alfred Nisonoff (Rosenstiel Center): Immunochimistry. Genetic control of the immune response.

Professor Michael Rosbash: Gene organization in eucaryotes. Macromolecular synthesis during oogenesis.

Professor Jerome A. Schiff (Director, Photobiology Institute): Plant biochemistry and physiology. Photocontrol of intracellular development. Sulphur metabolism.

Professor Andrew G. Szent-Gyorgyi: Mechanism of muscle contraction. Regulation of contractile proteins in both primitive and more advanced animals.	Associate Professor John E. Lisman: Mechanisms of excitation and adaptation in photoreceptors. Associate Professor Eve E. Marder: Neurotransmitter modulation of neural circuits.	Associate Professor Joan L. Press (Rosenstiel Center): Developmental immunology and immunogenetics. Associate Professor Lawrence J. Wangh: Steroid hormone regulated biosynthetic responses of <i>Xenopus</i> liver cells.	Associate Professor Kalpana P. White: Developmental neurogenetics. Adjunct Associate Professor Judith E. Tsipis: Virology.	Assistant Professor Kathleen M. Karrer: Molecular analysis of germ line development, genome rearrangements in protozoa. Assistant Professor Erik Selsing: Immunology.
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Degree Requirements

	At least one year of teaching experience (or equivalent) is required of all degree candidates.		
Master of Arts	The goal of the Biology Department is to train students in original research on the level of the Ph.D. Only rarely do we accept candidates for a master's degree.	Doctor of Philosophy	
Program of Study.	The program leading to the M.A. degree in Biology requires course work and a research thesis. The student's program will be set up by the Graduate Committee of the department. The candidate must complete the equivalent of one full year of graduate study at Brandeis University, normally computed at a minimum of eight half-courses of approved study which include research courses. The candidate must pass the prescribed courses and submit an acceptable thesis.	Program of Study.	All students will be expected to obtain a knowledge of the principles and techniques of the five areas represented in the department, i.e., genetics, developmental biology, neurobiology, immunology and cell biology, before taking the qualifying examination. The background a student is expected to have in these areas will be covered in courses given by the department. Entering students will be encouraged to do research rotations in at least two different laboratories. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.
Language Requirements.	There is no foreign language requirement for the master's degree.		Each student will choose his or her specific field of interest and will apply for a permanent adviser to be agreed upon by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's dissertation examining committee.
		Language Requirement.	There is no foreign language requirement for the Ph.D. degree.
		Qualifying Examination.	Ordinarily this examination is taken in the middle of the second year of study. Subsequent to the written portion of the examination, a proposition committee is formed and the student must submit and defend two propositions from two areas. The student will be examined orally on the two propositions by the three members of the proposition committee.
		Admission to Candidacy.	To be admitted to candidacy, the student must have (a) passed the qualifying examination, (b) been accepted by a graduate adviser.
		Dissertation and Defense.	Each student will conduct an original investigation. With the approval of the student's adviser, however, research courses may be elected at any time. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Courses of Instruction

Biology 100a. Photobiology of Cells and Organelles	See Photobiology 100a. Messrs. Gibbs, Schiff and Staff	Biology 125a. Immunology	A discussion of the biological aspects of the immune response. Topics to be covered include antibody structure and function; properties and characteristics of the cells involved in cell-mediated immunity, transplantation immunity, allergy, and humoral immunity; tolerance of the cellular perception of self and non-self; generation of antibody diversity; regulatory mechanisms involved in cell interaction, including suppression and genetic control; and aspects of tumor immunity. Ms. Press
Biology 101a. The Electron Microscope	One of the most powerful instruments in modern research is the electron microscope. With it, scientists can examine the outer surface of a whole beetle, the inner workings of cells, and can even see single atoms. Find out how the machine works, how it is used, and what it is used for. Mr. DeRosier		
Biology 102b. Structural Biochemistry	This course will explore how complex biological molecules work in terms of their detailed atomic structure. We will analyze the special designs and motions of proteins, nucleic acids and lipid molecules and discuss how they are organized in higher level cellular structures such as virus particles, chromosomes, muscle filaments and membranes. Important approaches to this material will include both experimental methods (such as X-ray crystallography and electron microscopy) and conceptual tools for solving structural problems. An intermediate course suitable for first-year graduate students and qualified undergraduates. Ms. Cohen	Biology 142a. Neurobiology	This course is designed as an introduction to the field of neurobiology. Original papers and a textbook will provide readings. Topics: membrane electrophysiology, synaptic transmission, sensory processing, generation of motor patterns, and neuronal plasticity. For graduate students with little or no previous course work and undergraduates who have previously taken Biology 41. Mr. Lisman
Biology 105b. Eukaryotic Molecular Biology	The structure and control of eukaryotic genes and their products. Experimental support for current views of control will be emphasized. Research papers will be discussed. Mr. Rosbash	Biology 143b. Developmental Neurobiology	Mechanisms used in the formation of the nervous system will be discussed. Topics to be covered include determination of the neuronal precursors, pattern formation in the nervous system, neuronal differentiation, and mechanisms responsible for neural specificity. The course will consider the use of modern cellular neurobiological techniques, molecular biology, and neurogenetics to address questions in neural development. Research papers will be discussed. Ms. White
Biology 106b. Regulation of Cellular Growth and Differentiation	This course will examine the biochemical mechanisms involved in the regulation of cellular proliferation and differentiation. We will discuss the role of extracellular growth factors, and the mechanisms of signal transduction in the control of the cell cycle. The genetic basis of differentiation, including the role of oncogenes in normal development and neoplasia will be addressed. Messrs. Newman and Wormington	Biology 161b. Developmental Genetics	□ Not offered 1986-1987 The course will consider the use of classical genetics, cytogenetics and molecular genetics in the analysis of developmental problems. Developmental processes such as oogenesis, embryogenesis and gene amplification will be used as framework for discussion of such genetic techniques as gendromorph mapping, somatic recombination, cytoplasmic and cellular transplantation, <i>in situ</i> hybridization, somatic cell recombination, etc. Readings will be assigned from the literature. Course requirements: one paper, one class presentation and a final examination.
Biology 107a. Behavioral Genetics	□ Not offered 1986-1987		
Biology 122a. Advanced Genetics	Mr. Haber		
Biology 124bR. Animal Virology	□ Not offered 1986-1987		

**Biology 175b.
Advanced
Immunology**

□ Not offered 1986-1986

Permission of instructor required.

Recent advances in immunobiology. The format will include lectures to introduce the subject material and a detailed analysis with student participation of papers in the current literature. Topics which will be considered include: lymphocyte subsets-differentiation, heterogeneity, function, phenotypes, and antigen receptors; requirements for and mechanisms of lymphocyte activation by antigen; the regulatory mechanisms permitting/preventing immune responsiveness; genetic restrictions in lymphocyte interactions, with emphasis on the role of genes in the transplantation and tumor immunity.

**Biology 177b.
Molecular
Immunology**

This course will cover studies of the immune system at the molecular levels with emphasis on work presently being done in the field. The format of the course will be student analysis and discussion of papers in the current literature.

Mr. Selsing

**Biology 200a.
Proseminar.**

Staff

**Biology 245a.
Selected Topics in
Plant Metabolism**

See Photobiology 245a.

Mr. Gibbs

**Biology 245b.
Comparative
Physiology and
Biochemistry of
Plants**

See Photobiology 245b.

Mr. Schiff

Courses in Research
**Biology 300a and b.
Biological Research**

Primarily for the first year student with the purpose of introducing him or her to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Staff

**Biology 400.
Biophysics of
Microorganisms**

Mr. Epstein

**Biology 401.
Muscle Physiology**

Mr. Huxley

**Biology 402.
Molecular Biology of
Microorganisms**

Mr. Halvorson

**Biology 403.
Immunochemistry:
Genetic Control of
the Immune
Response**

Mr. Nisonoff

**Biology 404.
Developmental
Neurobiology**

Ms. White

**Biology 405.
Cell Differentiation
and Morphogenesis**

Mr. Fulton

**Biology 406.
Neurophysiology**

Ms. Marder

**Biology 407.
Structural
Biochemistry**

Ms. Cohen

**Biology 408.
Behavioral Genetics**

Mr. Hall

**Biology 409.
Biophysics of Visual
Transduction**

Mr. Lisman

**Biology 410.
Plant Development**

Mr. Klein

**Biology 411.
Gene Control in
Vitellogenin**

Mr. Wangh

**Biology 412.
Structural Molecular
Biology**

Mr. DeRosier

**Biology 413.
General Physiology**

Mr. Szent-Gyorgyi

Biology 414.
Gene Organization
Eukaryotes.
Macromolecular
Synthesis During
Oogenesis

Mr. Rosbash

Biology 415.
Biochemistry and
Genetics of
Differentiation

Mr. Haber

Biology 416.
Molecular Analysis
of Germ Line
Development

Ms. Karrer

Biology 418.
Developmental
Immunology

Ms. Press

Biology 419.
Immunology

Mr. Selsing

Biology 420.
Nutritional
Patho-physiology

Mr. Hayes

Biology Journal
Clubs

There will be a number of informal Journal Clubs which deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

Biophysics

Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to provide a broad background in the physics and chemistry of living processes and to develop the students' capacity for independent research. The program offers opportunity for study and research in biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics and structural biology. Applicants are expected to have strong backgrounds in physical science with undergraduate concentrations in biology, chemistry, mathematics, physics or engineering.

Admission

The general requirements for admission to the Graduate School are given in an earlier section of this catalog. Applications should include, in addition to letters of reference, a personal statement giving reasons for choosing biophysics and indicating areas of interest. Applicants are required to take the Graduate Record Examination and are encouraged to visit Brandeis for interviews, if possible.

Faculty Advisory Committee

Associate Professor
John E. Lisman
(Biology), Chair

Professor
Carolyn Cohen
(Biology)

Professor
Christopher Miller
(Biochemistry)

Professor
Donald Caspar
(Physics)

Professor
Alfred G. Redfield
(Physics and
Biochemistry)

The faculty of the Biophysics Program is composed of members of the Biochemistry, Biology, Chemistry and Physics departments. About twenty faculty members participate in this graduate program.

Degree Requirements

Doctor of Philosophy

Program of Study.

Since Biophysics is very a broad field and students may have widely different backgrounds and goals, the course of study is flexible. During the first year students take Biophysics 300, a course in which students meet with selected faculty members to explore areas of research. Students are also required to successfully complete Biophysics 200b.

In addition, students generally complete the following courses: Advanced Biochemistry (Biochemistry 101a), Introduction to Physical Biochemistry (Biophysics 104b), Structural Biology (Biophysics 102b) and Biophysical Optics (Biophysics 101a). Courses to complete the student's program will depend on the student's background and interests. The additional courses may be in the areas of biochemistry, biology, biophysics, chemistry, mathematics, photobiology or physics.

Language Requirements.

Reading knowledge of one foreign language, chosen from French, German or Russian. A knowledge of computer programming may be substituted.

Admission to Candidacy.

Students are admitted to candidacy on the basis of academic performance and on research proposals that they develop and defend, generally during the second year of study. Students must pass Biophysics 200b in order to qualify for admission to candidacy.

Dissertation and Defense.

Each doctoral candidate will submit a dissertation describing his or her research and will be required to defend it in a Final Oral Examination.

Courses of Instruction

Photobiology 100a. Photobiology of Cells and Organelles	See Photobiology 100a. Messrs. Gibbs, Schiff and Staff	Biochemistry 214a. Molecular Basis for Contractility in Muscle and Non- Muscle Cells	<input type="checkbox"/> Not offered 1986-1987
Biology 101a. The Electron Microscope	Mr. DeRosier	Biochemistry 221b. Metabolic Regulation with Special Reference to Hormonal Regulation	<input type="checkbox"/> Not offered 1986-1987
Biology 102b. Structural Biochemistry	Ms. Cohen	Biochemistry 228b. Thermodynamic Linkages in Protein Interactions	<input type="checkbox"/> Not offered 1986-1987
Biochemistry 104b. Introduction to Physical Biochemistry	Mr. Fasman	Biochemistry 231a. Ion Channel Proteins	<input type="checkbox"/> Not offered 1986-1987
Biophysics 142b. Neurochemistry and Cellular Neurobiology	Mr. Lisman	Biophysics 300. Introduction to Research in Biophysics	Students carry out a project in the research laboratory of one of the faculty members. Projects and faculty are selected from the departments of biochemistry, biology, chemistry and physics and the Institute of Photobiology. At least three terms of Biophysics 300 are required. Staff
Physics 152b. Biological Assembly	Mr. Caspar		
Biophysics 200b. Seminar in Biophysical Research	A required seminar for Biophysics majors which will deal with current biophysical research. Emphasis is on the understanding, critical evaluation and use of scientific literature. Students will discuss topics from the areas of biophysical chemistry, cellular physiology, molecular genetics, photobiology, and structural biology, based on the reading of significant articles. In consultation with the faculty, each student will develop a research proposition based on independent reading and will prepare a research plan in the form of a thesis proposal. Open to graduate students in other sciences with permission of the instructor. Staff		

Chemistry

Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry and in chemical-physics. (Detailed information on the interdisciplinary specialization in chemical physics is found on page 39). All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor, when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine if the student shall be required to make up deficiencies in preparation. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study and in determining a student's eligibility to continue in a degree program.

Faculty

Professor
Irving R. Epstein:
Chair: Experimental and theoretical studies of oscillating chemical reactions and dynamic instabilities; mathematical modeling of biochemical kinetics.

Professor
Ernest Crunwald:
Solvation in polar liquid solutions; molecular structure of ion pairs; structure-energy relationships; concerted reaction mechanism.

Professor
James C. Hendrickson:
Synthesis of natural products; computerization of synthesis design and development of new synthetic reactions.

Professor
Peter C. Jordan:
Statistical mechanics of membrane transport; electrostatic modeling of ion pores; molecular dynamics.

Professor
Philip M. Keehn:
Synthetic methods, organic synthesis of strained rings and theoretically interesting molecules; applications of NMR spectroscopy to organic systems; photooxidation; pure and applied laser chemistry of organic systems; host-guest complexes.

Professor
Kenneth Kustin:
Bioinorganic chemistry; vanadium and iron in tunicate blood cells and human tissues; fast reactions; oscillating reactions.

Professor
Henry Linschitz:
Reactions of excited molecules; electron-transfer processes; photo-ionization in solution; metal complexes; physical mechanisms of photo biological processes.

Professor
Myron Rosenblum:
Chemistry of organometallic complexes of the transition elements. New methods in organic synthesis employing organometallic complexes. Electroactive organometallic polymers.

Professor
Colin Steel:
Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions; photophysics and photochemistry of infrared laser-induced reactions.

Professor
Robert Stevenson:
Isolation and structure of natural products; compounds of medicinal interest (steroids, terpenoids, lignans, heterocyclics).

Professor
Thomas R. Tuttle:
Chemistry of liquid solutions; the composition and structures of species in metal solutions in polar solvents; application of spectroscopy, e.g., magnetic resonance, optical and spectropolarimetry to elucidation of the composition and structure of solutions; theory of chemical species in solution.

Associate Professor
In-Yam Chan:
Optically detected magnetic resonance; laser spectroscopy.

Associate Professor
Bruce M. Foxman:
X-ray structure determination; coordination polymers; chemical, physical and crystallographic studies of solid-state reactions.

Associate Professor
Michael J. Henchman:
The chemistry of ions in the gas phase; the effect of solvation on reactivity and mechanism.

Associate Professor
Barry B. Snider:
Synthetic methods; mechanism of synthetically important reactions; total synthesis of natural products.

Assistant Professor
Alan M. Stolzenberg:
Bioinorganic chemistry; synthesis, structure, and reactivity of inorganic and organometallic complexes; homogeneous catalysis; electrochemistry and electron transfer.

Degree Requirements

Detailed information on the interdisciplinary specialization in chemical physics is found on page 39.

Entering students may be admitted to either the master's or the doctoral program. All candidates for advanced degrees are required to meet the following requirements:

Qualifying Examination.

These examinations are set twice a year, in September and January, and are based on the undergraduate chemistry curriculum. Students are required to take and are expected to pass qualifying examinations in organic, inorganic-analytical and physical chemistry during their first year.

Language Requirements.

Each student is obliged to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar.

Each student in residence is required to attend and participate in the seminar in his or her chosen area of concentration throughout the period of graduate study.

Teaching.

It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Placement and Evaluation of Progress.

Recommendations with respect to the first-year course of study will be based on the performance on the initial qualifying examinations. Admission to the graduate degree programs will be based on the student's record in course work during the first year and the performance on the qualifying examinations.

Admission to Candidacy.

with previous graduate experience, a maximum of five courses may be transferred for credit. It is expected that doctoral students will choose a research adviser during the first year, normally in the second semester.

A student is recommended for admission to candidacy for the doctoral degree upon certification by his or her thesis adviser and the Graduate Studies Committee that the student has satisfied the qualifying and language examination requirements and has made satisfactory progress in the program of study, research and the final Ph.D. examinations.

Final Examinations.

The graduate student must demonstrate proficiency by taking final examinations in his or her major field: organic, physical-organic, physical, or inorganic chemistry. In the organic chemistry program, a cumulative examination procedure is used. Each year, six one-hour examinations (on unannounced topics), and one three-hour examination (on an announced reading) are given. The final examination requirement is satisfied by the student having passed a) one three-hour examination and six one-hour examinations, or b) two three-hour examinations and three one-hour examinations. In physical-organic chemistry, final examinations are administered twice a year and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he or she takes a written examination on one proposition, and is examined orally on his or her proposed research project and the remaining proposition.

Master of Arts

Program of Study.

Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The program will include laboratory work and, normally, six semester courses at the graduate level. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as perspective of other areas.

Residence Requirements.

The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense.

A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Residence Requirement.

The minimum residence requirement for the M.A. degree is one year.

Doctor of Philosophy

Program of Study.

A balanced program of study will be prepared by the students and the Departmental Graduate Studies Committee. In general, students will be required to take a minimum of seven graduate level courses, of which two must lie outside the student's field of research. If a student fails to pass a qualifying examination after two attempts, a graduate course has to be taken in that area of chemistry before the end of the second year. For this purpose a list of appropriate courses is available upon request. For students entering

Courses of Instruction

Chemistry 113b. Advanced Laboratory Techniques: Modern Organic Methods	□ Not offered 1986-1987	Chemistry 141a. Advanced Physical Chemistry I	Thermodynamics and statistical thermodynamics. Properties of real systems: gases phase stability, chemical equilibrium, and solution. Statistical equilibrium, ensembles, and fluctuations. Prerequisite: Satisfactory grade in an undergraduate courses in physical chemistry. Mr. Steel
Chemistry 121a. Inorganic Chemistry I. Lectures	Introduction to the electronic and molecular structures and kinetics and reaction mechanisms of transmission-metal complexes. Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry. Three lecture hours a week. Mr. Foxman	Chemistry 141b. Advanced Physical Chemistry I	Irreversible thermodynamics and chemical kinetics. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Active transport, relaxation kinetics and oscillating reactions. Solution kinetics including enzyme reactions. Gas kinetics and theories of elementary processes. Microscopic kinetics: energy transfer and collision dynamics. Prerequisite: Satisfactory grade in Chemistry 141a or permission of instructor. Mr. Kustin
Chemistry 130a. Advanced Organic Chemistry: Structure	□ Not offered 1986-1987	Chemistry 142bR. Advanced Physical Chemistry II	Quantum mechanics: waves and operator methods. Schrodinger's equation, simple model systems, angular momenta, perturbation theory and variational principle. Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry. Mr. Chan
Chemistry 131a. Advanced Organic Chemistry: Topics in Structure and Reactivity	□ Not offered 1986-1987	Chemistry 143aR. Advanced Physical Chemistry II	Quantum chemistry; spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics. Permission of instructor required. A continuation of 142bR. Mr. Tuttle
Chemistry 132b. Advanced Organic Chemistry: Spectroscopy	Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds. Prerequisite: Satisfactory grade in Chemistry 130a or permission of instructor. Mr. Stevenson	Chemistry 144a. Structure and Spectroscopy	□ Not offered 1986-1987
Chemistry 133aR. Advanced Organic Chemistry: Mechanisms	Principles of the determination of reaction mechanisms. Substituent effects. Mechanisms of nucleophilic and electrophilic substitution reactions. Carbocation chemistry. Mechanisms of addition and elimination. Acidity and basicity. Mr. Grunwald	Chemistry 147b. Applications of Group Theoretical Methods to Problems in Chemistry	□ Not offered 1986-1987
Chemistry 134b. Advanced Organic Chemistry: Synthesis	Systematic design of organic syntheses, including a survey of reaction for construction and functionalization of organic molecules and criteria for their use in synthesis design. Selected total syntheses from the literature will be examined. Mr. Hendrickson	Chemistry 150c. Special Topics in Chemistry	□ Not offered 1986-1987
Chemistry 137bR. The Chemistry of Organic Natural Products	Natural products chemistry will be surveyed within a biogenetic framework. Occurrence, isolation, structure elucidation, biogenesis and synthesis will be covered with an emphasis on modern methods of establishing biogenesis and biogenetic type synthesis. Mr. Snider		

Biochemistry 100a. Introductory Biochemistry	Biochemistry 100a. Section 1: Ms. Lowey and Mr. Newman Section 2: Messrs. Abeles and Jencks	Chemistry 243aR. Statistical Thermodynamics	Elementary statistical mechanics of systems in equilibrium; Boltzmann, Fermi-Dirac and Bose-Einstein statistics; microcanonical, canonical and grand canonical ensembles; applications to thermodynamic systems. Mr. Jordan
Biochemistry 100aR. Introductory Biochemistry	See Biochemistry 100a. Mr. Murakami	Chemistry 250c. Chemical Physics Seminar	Required of graduate students in chemical physics, who must audit this course each year. Staff
Chemistry 200. Advanced Chemistry Laboratory	Staff	The following courses are given every three to five years or when there is sufficient student interest:	
Chemistry 220c. Inorganic Chemistry Seminar	Required of graduate students in inorganic chemistry, who must audit this course each year. Staff	Chemistry 122b. Inorganic Chemistry II, Lectures	□ Not offered 1986-1987
Chemistry 229b. Special Topics in Inorganic Chemistry	□ Not offered 1986-1987	Chemistry 123b. Nuclear Chemistry	□ Not offered 1986-1987
Chemistry 231c. Organic Chemistry Seminar	Required of graduate students in organic chemistry, who must audit this course each year. Staff	Chemistry 248a. Advanced Quantum Chemistry	□ Not offered 1986-1987
Chemistry 232b. Chemistry of Heterocyclic Compounds	□ Not offered 1986-1987	Chemistry Colloquium Lectures by faculty and invited speakers. Required of all graduate students. Non-credit.	
Chemistry 234b. Chemistry of Organometallic Compounds	□ Not offered 1986-1987	Courses in Research	
Chemistry 235b. Special Topics in Organic Chemistry	The synthesis of complex targets will be covered with an emphasis on synthesis design and control of absolute and relative stereochemistry. Mr. Snider	Chemistry 401. Organic Chemistry	Chemistry of natural products: steroids, triterpenoids, bisarylpropanoids, benzofurans. Mr. Stevenson
Chemistry 237bR. The Chemistry of Organic Natural Products	□ Not offered 1986-1987	Chemistry 403. Organic Chemistry	Chemistry of organometallic complexes of the transition elements. New methods in organic synthesis employing organometallic complexes. Electroactive organometallic polymers. Mr. Rosenblum
Chemistry 240c. Physical-Organic Chemistry Seminar	Required of graduate students in physical-organic chemistry, who must audit this course each year. Staff	Chemistry 404. Organic Chemistry	Synthesis of natural products; development of new synthetic reactions; computerization of synthesis design systematics. Mr. Hendrickson
Chemistry 241c. Physical Chemistry Seminar	Required of graduate students in physical chemistry, who must audit this course each year. Staff	Chemistry 406. Physical Chemistry	Reactions of excited molecules; luminescence; electron-transfer processes; metal complexes; physical mechanisms of photobiological processes. Mr. Linschitz

Chemistry 408. Physical Chemistry	Experimental and theoretical study of chemical species in solution. Spectroscopic investigations of metal solutions in polar solvents. Mr. Tuttle	Chemistry 417. Organic Chemistry	Organic synthesis of strained rings and theoretically interesting molecules; synthetic methods; application of nuclear magnetic resonance spectroscopy to organic systems; photooxidation; thermal chemistry; pure and applied laser chemistry of organic systems; enclathration and host-guest complexation in tri-o-thymotide. Mr. Keehn
Chemistry 409. Inorganic Chemistry	Inorganic biochemistry; vanadium and iron in tunicate blood cells and human tissues; fast reactions; oscillating reactions. Mr. Kustin	Chemistry 419. Inorganic Chemistry	X-ray structure determination; coordination polymers; reactions in crystals; kinetics, mechanisms, and crystallography of rearrangement, polymerization and decomposition reactions in the solid-state. Mr. Foxman
Chemistry 411. Physical Chemistry	Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions. Photophysics and photochemistry of infrared laser-induced reactions. Mr. Steel	Chemistry 421. Organic Chemistry	Synthetic methodology and natural product synthesis: Lewis acid induced carbon-carbon bond forming reactions of alkenes and their application to natural product synthesis; intramolecular reactions; ene and Prins reactions; synthesis of biologically active natural products. Mr. Snider
Chemistry 412. Physical and Physical Organic Chemistry	Molecular electronic spectra and conformational studies at high temperatures; solvation in polar liquid solutions; molecular structure of ion pairs. Mr. Crunwald	Chemistry 422. Inorganic Chemistry	Bioinorganic chemistry. Coordination chemistry of porphyrins, hydroporphyrins, and related macrocycles. Organometallic chemistry. Chemistry of metallacycles. Mr. Stolzenberg
Chemistry 413. Physical Chemistry	Membrane transport; electrostatic modeling of ion pores; molecular dynamics of ionic motion in biological molecules. Mr. Jordan		
Chemistry 414. Physical Chemistry	Kinetic studies of the reactions and properties of ions and solvated ions in the gas phase. Mr. Henchman		
Chemistry 415. Physical Chemistry	Experimental and theoretical studies of oscillating chemical reactions and dynamic instabilities; mathematical modeling of biochemical kinetics. Mr. Epstein		
Chemistry 416. Physical Chemistry	Optically detected ENDOR investigation of organic triplet state molecules. Interaction between an electronically excited molecule and lattice phonon. Supersonic jet spectroscopy on large molecules. Mr. Chan		

Ph.D. in Chemistry with Specialization in Chemical Physics

The graduate program in chemical physics is an interdisciplinary specialization designed to meet the needs of students who wish to prepare themselves for the study of scientific problems using the methods and theories of modern physics and physical chemistry. This objective is attained by (1) formal course work in chemistry, physics, and, possibly, mathematics; (2) participation in relevant graduate seminars; (3) a program of supervised research involving chemical physics; (4) independent study. The program is designed to be flexible in providing individual programs of study to satisfy the particular interests and needs of each student. Final programs of study and research will be jointly arrived at by the student, his or her research supervisor and the Chemical Physics Committee. Only candidates for the Ph.D. will be accepted.

Admission

The general requirements for admission to the Graduate School apply to candidates for admission to the graduate program in chemical physics. Applicants should have a strong undergraduate background in chemistry, physics and mathematics.

Degree Requirements

No master's degree is offered with specialization in chemical physics, but students who satisfy the appropriate requirements will be eligible for the M.A. degree in chemistry.

All candidates for the Ph.D. degree in Chemistry with specialization in chemical physics must meet the following requirements:

Qualifying Examinations.

Each student is expected to demonstrate a satisfactory knowledge of undergraduate chemistry, physics and mathematics by the performance in three qualifying examinations: organic or inorganic/analytical chemistry and one each in physical chemistry and in physics/mathematics. These examinations are set twice a year, in September and January. Results of these examinations will be used as an aid in constructing the student's initial program of course work and will be considered by the Chemical Physics Committee in evaluating the student's progress.

Language Requirements.

Each student is required to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar.

Each student in residence is required to attend and to participate in the Chemical Physics Seminar. Participation in other seminars in physics and chemistry is also recommended.

Teaching.

It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Doctor of Philosophy

Program of Study.

It is expected that some candidates for the Ph.D. degree in chemistry with specialization in chemical physics may require a longer period of time in course work than will students in either of the fields of physics or chemistry. In general, the program for the Ph.D. in chemistry with specialization in chemical physics will include eight semester graduate courses: four in physical chemistry, one in either organic or inorganic chemistry and three in physics. No specific course work in mathematics is required, but students are expected to be familiar with the techniques necessary for the proper pursuit of their research. In addition, each student is expected to demonstrate a knowledge of elementary computer programming.

Students may satisfy their program's course requirements in part or in entirety by passing (or giving evidence of ability to pass) the final examination in the appropriate number of such courses. Courses in areas related to chemistry and physics may also be considered by the Chemical Physics Committee in partial fulfillment of the requirements.

Admission to Candidacy.

Students are recommended for admission to candidacy for the doctoral degree upon certification by their thesis adviser and the Chemical Physics Committee that they have satisfied the qualifying and language examination requirements and have made satisfactory progress in the program of study, research and the final Ph.D. examination.

Final Examinations.

Final examinations in chemical physics are generally taken during the third semester of graduate work. The student is assigned a set of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two.

Residence Requirements.

The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense.

A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Cognitive Science

See Psychology.

Comparative History

Objectives

The graduate program in comparative European history leads to the degree of Doctor of Philosophy. It trains students to approach the past from a comparative perspective. This method represents the most fruitful way to interpret the past, and the program fosters it in two ways. First, students will develop expertise in two broad fields of history — either medieval and early modern or early modern and modern. Second, they will study their fields from a thematic approach which transcends national boundaries and moves away from conventional periodization.

The comparative history program gives students a broad understanding of the development of Europe and fosters the ability to make cross-cultural comparisons. The thematic approach is central to the process. The Brandeis history faculty is exceptionally diverse in its interests and offers the student a variety of approaches to the past: the study of political structure, economics, the family, social organization, psychohistory, culture and thought. Each student will read widely on two of these subjects and in the process learn what developments were unique and which ones were comparable over time and space. Finally, students will take a non-European field drawn from the Americas, the Near East or the Far East.

The program is designed to prepare students for the competitive academic environment of the next decade. It trains them in methods of historical research and equips them to teach a broad range of subjects. On a deeper level, comparative history fosters intellectual flexibility and interdisciplinary skills which can be creatively employed both inside and outside academia.

A small, select student body will work in close cooperation with the faculty. Most instruction will take place in seminars specifically designed for graduate students or in individual conferences with faculty advisers. From the beginning, the curriculum will help students prepare for their qualifying examinations and guide them toward eventual dissertation research.

During the first year, students must prepare a major research paper on a topic chosen in consultation with a principal adviser. The paper may be comparative in research (involving two or more symmetrical case studies), or it may focus upon a single case (with that research informed by a reading of secondary literature on similar cases). The paper constitutes the major intellectual enterprise of the first year, and students allot half their time to it in the first semester. First-year students also enroll in two introductory graduate colloquia, which cover the early modern and modern periods. During both of their first two years of residence, students must also enroll in the comparative history seminar, which treats significant problems in comparative perspective and introduces students to the methods and issues in comparative history. Students must also enroll in the historiography colloquium (offered alternate years). Finally, before they may take the qualifying examination all students must complete a tutorial or other work focusing on a part of the world geographically or chronologically removed from their principal area of specialization with a view to gaining a comparative perspective on their major research interest.

Students are expected to have a general mastery of two broad fields of history, either medieval and early modern or early modern and modern history. Specifically, they must demonstrate a mastery of two thematic fields within their general fields. These thematic fields will normally be chosen from such approaches as cultural, diplomatic, economic, family, intellectual, political and social history. With the approval of the faculty, a student may substitute a methodological field, such as psychohistory, anthropological history or quantitative history for half of one conventional theme. Students may also petition to substitute the medieval period for a portion of the early modern period.

Students should normally plan to complete all work for the doctorate, including the dissertation, within four to five years after entering the program; prolongation of study past the sixth year is discouraged.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Students with a sound preparation in history and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the other social sciences or in allied fields such as comparative literature may, however, apply. Applicants

should submit a sample of written work, preferably in European history. Only doctoral candidates will be accepted into the regular program. Unusually well-qualified students with distinguished records who wish to obtain a master's degree in modern history before going on to further training in such fields as law, business, diplomacy, social work, or medicine, or who have already earned degrees in these fields, may also be admitted.

Faculty

Professor
Stephen A. Schuker,
Chair: Modern
diplomatic, economic,
political and business
history.

Professor
Rudolph Binion:
Modern history.
Culture and thought.
Psychohistory.

Professor
Engene C. Black:
Modern history.
Political and social
institutions.

Professor
David H. Fischer:
Modern history. Social
institutions.

Professor
Gregory Freeze:
Russia and Germany.
Social history.

Professor
Morton Keller:
Legal and political
institutions.

Professor
**Bernard
Wasserstein:**
Modern European,
Jewish and Near
Eastern history.

Associate Professor
Samuel K. Cohn, Jr.
Renaissance and early
modern history.

Associate Professor
Lorraine Daston:
History of science.

Associate Professor
Christine Heyrman:
Community, religion
and economic
Colonial America.

Associate Professor
William E. Kapelle:
Medieval history.

Assistant Professor
Alice Kelikian:
Modern history. Social
institutional history.

Assistant Professor
James Kloppenburg:
Intellectual and
cultural history.

Assistant Professor
Robert Schneider:
Early modern history.

Assistant Professor
David M. Scooby:
Modern urban
American history.

Degree Requirements

Master of Arts

An M.A. degree in History will be awarded to those students who have satisfactorily completed one year of residence as a full time student, fulfilled the first year language requirement and passed a special examination at the master's level. Students who have completed the Ph.D. qualifying examinations and the stated requirements for the master's degree automatically qualify for conferral of the master's degree.

Qualifying
Examination.

Normally the student will take the qualifying examination at the end of the second year of study. Any student who has failed to complete the qualifying examination by the sixth semester will be dropped from the program.

Admission to
Candidacy.

A student may be admitted to candidacy for the Ph.D. degree when he or she has completed course and residence requirements, demonstrated proficiency in the required foreign languages, passed the qualifying examination and gained approval of his or her dissertation topic by the faculty of the program.

Doctor of Philosophy

Program of Study.

During the first year in the program, students will complete a major research paper and the two colloquia in European history. Within the first two years, they must also take a proseminar in early modern Europe, a historiography course and two seminars in comparative history, besides fulfilling the geographical outside-field requirement. At the beginning of the third year, students will make an oral presentation setting their proposed dissertation topic in comparative perspective; this is called the "category examination." The student will, when feasible, spend the third or fourth year in the program abroad pursuing research for the dissertation. Arrangements can be made for conferences with foreign scholars who can advise on the subject of research.

Dissertation Defense.

The student will normally define a dissertation topic in the term preceding the qualifying examination but in no case later than the end of the fifth semester in the program. When the student's dissertation committee accepts the completed dissertation, the candidate must defend it at a final oral examination.

Language Requirement.

The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass, upon admission, one language examination testing the ability to read historical prose with a dictionary. The second language examination must be passed before the student registers for the third semester. All students must show competence in either French or German; for the second language another major tongue relevant to the student's research interests may be substituted.

Courses of Instruction

Seminars		Comparative History 321 — 339a and b.	321a and b. Mr. Binion	332a and b. Mr. Wasserstein
History 190aR. Historiography	□ Not offered 1986-1987	Readings	322a and b. Mr. Black	333a and b. Mr. Cohn
History 200a. Colloquium in Early Modern European History	An introduction to the major issues and methods in the social history of Europe during the early modern and modern periods. Mr. Cohn		323a and b. Ms. Daston	334a and b. Mr. Kapelle
			324a and b. Mr. Fischer	335a and b. Ms. Kelikan
			325a and b. Mr. Freeze	337a and b. Mr. Scobey
Comparative History 200b. Colloquium in European Comparative History Since the Eighteenth Century	Comparative examination of major historical issues in Europe from the eighteenth through the twentieth centuries. Mr. Schuker		326a and b. Mr. Keller	338a and b. Mr. Kloppenberg
			328a and b. Ms. Heyrman	339a and b. Mr. Schneider
			330a and b. Mr. Schuker	
Comparative History 202bR. Seminar in Comparative History: Town and Country	□ Not offered 1986-1987	Comparative History 401-419. Dissertation Research	401. Mr. Binion 402. Mr. Black 403. Ms. Daston 404. Mr. Fischer 405. Mr. Freeze 406. Mr. Keller 408. Ms. Heyrman 410. Mr. Schuker	412. Mr. Wasserstein 413. Mr. Cohn 414. Mr. Kapelle 415. Ms. Kelikian 417. Mr. Scobey 418. Mr. Kloppenberg 419. Mr. Schneider
Comparative History 203b. Seminar in Comparative History: Death in History	□ Not offered 1986-1987	Comparative History 500. Registration in Time		
Comparative History 301 — 319a and b. Research Papers	301a and b. Mr. Binion	In addition the following courses may be taken as equivalent to Comparative History seminars.		
	302a and b. Mr. Black	History 110a. The Civilization of the Early Middle Ages	□ Not offered 1986-1987	
	303a and b. Ms. Daston	History 110b. The Civilization of the High and Late Middle Ages	Mr. Kapelle	
	304a and b. Mr. Fischer			
	305a and b. Mr. Freeze			
	306a and b. Mr. Keller	History 112b. The Crusades and the Expansion of Medieval Europe	□ Not offered 1986-1987	
	308a and b. Ms. Heyrman			
	310a and b. Mr. Schuker	History 113a. English Medieval History	□ Not offered 1986-1987	
		History 123a. The Renaissance	□ Not offered 1986-1987	
		History 123b. The Reformation	Mr. Schneider	

History 124b.
**Social and Cultural
Transformations:
The Renaissance and
the Reformation**

Mr. Cohn

History 125a.
**The General Crisis
of the Seventeenth
Century in Europe**

Mr. Schneider

History 126b.
**Tudor-Stuart
England**

□ Not offered 1986-1987

History 127bR.
**L'Ancien Regime:
State and Society in
Pre-Revolutionary
France**

□ Not offered 1986-1987

History 130a.
**The French
Revolution**

Mr. Black

History 131aR.
**The Scientific
Revolution**

Ms. Daston

History 132a.
**Modern European
Thought and
Culture: Marlowe to
Mill**

Mr. Binion

History 132b.
**European Thought
and Culture Since
Darwin**

Mr. Binion

History 133a.
The Enlightenment

□ Not offered 1986-1987

History 133b.
**Topics in Nineteenth
and Twentieth
Century Intellectual
History**

□ Not offered 1986-1987

History 134a.
**19th Century
Europe: From
Revolution to
National Unification**

□ Not offered 1986-1987

History 134b.
**Nineteenth Century
Europe: Nationalism,
Imperialism,
Socialism
(1870-1914)**

Mr. Black

History 137a.
**Evolution of
International
System, 1815-1945**

Mr. Schuker

History 138a.
**Economy and
Society in Europe,
1750-1900**

Ms. Kelikian

History 138bR.
**Industrial and Social
Change, 1900 to the
Present**

□ Not offered 1986-1987

History 139a.
**Women, Work and
Family**

□ Not offered 1986-1987

History 139b.
**Fascism East and
West**

□ Not offered 1986-1987

History 141bR.
**Studies in British
History — 1830 to
the Present**

Mr. Black

History 142b.
**Twentieth Century
Europe**

Mr. Wasserstein

History 146b.
**Topics in German
History: Hitler,
Germany and
Europe**

Mr. Binion

History 147a.
**Rise of Imperial
Russia**

Ms. Pouncey

History 147b.
Russia Since 1861

Ms. Pouncey

History 149a.
**Topics in Soviet
History**

□ Not offered 1986-1987

History 181bR.
**Seminar on Chinese
Thought**

Mr. Schrecker

History 183bR. ☐ Not offered 1986-1987
**The Great Powers of
 the Middle East**

History 190aR. ☐ Not offered 1986-1987
Methods of History

History 184a.
**Arabs and Jews in
 Palestine, 1881-1948** Mr. Wasserstein

History 194b. ☐ Not offered 1986-1987
**Politics and
 Diplomacy in
 Europe, 1914-1945**

History 186b.
The Vietnam War Mr. Schrecker

Comparative Literature

See Joint Program of Literary Studies.

Computer Science

Objectives

Research in computer science at Brandeis is concerned with the fundamental concepts that underlie the creation and use of computing devices. This includes the study of the capabilities and limitations of various models of computation, the design of efficient computer algorithms, semantics of programming languages, artificial intelligence, the principles underlying the mechanical processing of information, and the organization of information for computer processing. The graduate program in computer science is designed to educate the student in advanced areas of computer science and train the student to engage in original research. The program is designed primarily to lead to the Doctor of Philosophy degree.

Admission

The general requirements for admission to the computer science graduate program are the same as those for the graduate school as a whole. Funds from research grants and fellowships are available to provide financial support for well-qualified students.

Faculty

Professor
Jacques Cohen,
Chair: Compiler
design, Analysis of
algorithms, Logic
programming, Data
structure.

Visiting Professor
Martin Cohn:
Information theory,
Codes, Sequences,
Data compression.

Professor
David L. Waltz:
Artificial intelligence,
Natural language
processing, Vision,
Robotics.

Visiting Associate
Professor
Edward Balkovich:
Distributed
computing.

Associate Professor
Max Chretien

Associate Professor
Ira M. Gessel:
Combinatorics,
Algorithms.

Associate Professor
James A. Storer:
Computational
complexity, Design
and analysis of
algorithms, Parallel
algorithms, Data
compression, VLSI
layout, Computational
aspects of robotics.

Assistant Professor
Richard Alterman:
Artificial intelligence.

Assistant Professor
Timothy J. Hickey:
Complexity, Analysis,
Logic programming
and parallel
processing, Symbolic
manipulation.

Visiting Assistant
Professor
Harry C. Mairson:
Theory, Analysis of
algorithms, Lower
bounds.

Lecturer with Rank of
Assistant Professor
Alex T. Prengel

Degree Requirements

Doctor of Philosophy Two years' residence as a full-time student.

Completion of a doctoral dissertation that is approved by the department, and successful defense of that dissertation.

Program of Study.

An approved schedule of courses typically consists of eight to ten graduate courses at the 100 and 200 level, which may include a small number of courses from other departments (e.g., mathematics, psychology, and physics). These courses are supplemented with independent study in preparation for the qualifying examination. The qualifying examination is normally taken at the end of the second year. The Ph.D. dissertation is normally written during the third and fourth years. It is expected that during this time the student will participate in advanced seminars (computer science courses numbered in the 300s) and other departmental research activities.

**Qualifying
Examinations.**

The qualifying examination consists of two parts. The first part consists of a set of four written examinations in areas selected by the student and approved by the faculty. The second part of the qualifying examination is an oral examination to be administered by the computer science faculty.

**Admission to
Candidacy.**

To be admitted to candidacy for the Ph.D. degree, the student must satisfactorily complete an approved schedule of courses as a full-time student and demonstrate superior performance on the qualifying examination.

**Language
Requirement.**

There is no foreign language requirement for the doctoral degree.

**Dissertation and
Defense.**

The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

Computer Science 110a. Artificial Intelligence	Artificial intelligence principles and state-of-the-art. Knowledge representation, knowledge based systems, reasoning, learning, natural languages understanding, machine vision, massively parallel models of cognition; selected relevant results from psychology and linguistics. Mr. Waltz	Computer Science 180a. Algorithms	Basic concepts in the theory of algorithm design and analysis, including: advanced data structures and algorithms, NP and PSPACE completeness parallel algorithms, and specialized topics selected by the instructor. Staff
Computer Science 120b. Computer Architecture	□ Not offered 1986-1987 The design and analysis of data communication networks. Topics will include protocols, switching, topology, and measurement. Examples will be drawn from existing network architecture.	Computer Science 190a. Theory of Computation	□ Not offered 1986-1987 A gradual introduction to the theory of computation. Topics covered include formal language and automata, undecidability and computability, complexity classes, relativized problems, elementary recursion theory, automatic theorem proving and inductive inference.
Computer Science 140aR. Logic Programming	Relationship of Prolog to predicate calculus, horn clauses, unification algorithms, intelligent backtracking, infinite trees, inequalities, implementation issues, concurrent Prolog. Mr. Hickey	Computer Science 230a. Computational Aspects of VLSI	□ Not offered 1986-1987 The course is primarily concerned with the theoretical issues involved with the design and layout of VLSI circuits, however, many practical issues will be addressed along the way; in particular, students will be required to design a small nMOS chip. Topics covered include: circuit layout, resource trade-offs and limits to computations, parallel computation, computation networks, systolic arrays, VLSI design tools, "silicon compilation," and concepts motivated by future technology (e.g., 3D circuits, wafer-scale integration, optical circuits, etc.).
Computer Science 150a. Compiler Design	Covers advanced topics in parser and lexical scanner generation, data flow analysis, code generation, parallel compilation. Staff	Computer Science 240a. Semantics of Programming Languages	□ Not offered 1986-1987 Mathematical description of basic concepts of programming languages. Modeling using the lambda-calculus. Derivation of compilers from formal descriptions of languages.
Computer Science 160a. Parallel and Distributing Computing	□ Not offered 1986-1987 An introduction to distributing computing. Topics include the description of the basic problems — mutual exclusion, dining philosophers, cooperation; centralized solutions vs. distributed solutions; communication by shared memory vs. communication by messages; shared memory models: read-write variables vs. read-only variables test vs. test-and-set; message passing systems: types of lines of communication; language issues: parallelism in Simula, PL/I, Algo 168 (semaphores) Monitors, CS, Ada, Scheme; semantic issues: denotational semantics for parallelism; synchronous models (e.g., PRAM's and Ultracomputers).	Computer Science 285a. Advanced Topics in Algorithms and Computational Complexity	□ Not offered 1986-1987 Content of course will vary from year to year.
Computer Science 170b. Information Theory and Cryptology	This course will examine the theory of representing information compactly and securely. The Shannon theory shows the duality between reliability and security. One-way ciphers and public-key systems currently under scrutiny rely on the computational complexity of algorithms. We will examine these new approaches as well as traditional secrecy systems both from the standpoint of the designer and the cryptanalyst. Mr. Cohn	Computer Science 310. Seminar in Artificial Intelligence	□ Not offered 1986-1987
		Computer Science 340. Seminar in Programming Languages	□ Not offered 1986-1987

Computer Science ☐ Not offered 1986-1987
 390.
**Seminar in Theory
 of Computation**

Computer Science	400. Mr. Cohen
400-404.	401. Mr. Waltz
Dissertation	403. Mr. Hickey
Research	404. Mr. Storer

Cross-Registration at Boston College, Boston University and Tufts University

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. Brochures suggesting courses for cross-registration at each of the host institutions are available at the graduate school office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course and should expect to satisfy the prerequisites and requirements normally required

for admission to the course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar and should present this permit to the Graduate School Registrar of the host institution.

Economics

See International Economics and Finance.

English and American Literature

Objective

The graduate program in English and American Literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to related scholarly disciplines, particularly history and linguistics. It also offers candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. They should submit two samples of written work, prose and/or poetry. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

Professor
Susan Staves,
Chair:
Restoration and
eighteenth century.

Professor
Philip Fisher:
Nineteenth century
literature. Critical
theory.

Professor
Michael T. Gilmore:
Puritanism. Literature
of the American
Revolution. American
renaissance.

Professor
Engene Goodheart,
Director of Graduate
Studies: Criticism.
Nineteenth and
twentieth century
literature and thought.

Professor
Allen Grossman:
Poetry and poetic
structures.
Seventeenth century
literature. Modern and
contemporary
literature.

Professor
Robert O. Preyer:
Nineteenth century
literature. Social and
intellectual history.

Professor
John H. Smith:
Shakespeare
Renaissance drama.
Neo-Latin literature.

Professor
Peter Swiggart:
American literature.
Criticism theory.

Visiting Fannie Hurst
Professor
Frank Bidart:
Poetry.

Visiting Fannie Hurst
Professor
Stephen Dobyns:
Poetry and fiction.

Visiting Fannie Hurst
Professor
Sharon Olds:
Poetry.

Associate Professor
Karen W. Klein:
Medieval literature.
Women's studies.

Associate Professor
Alan Levitan:
Shakespeare. Music
and drama.

Visiting Associate
Professor
Michael McKeon:
Seventeenth and
eighteenth century
poetics. History of the
novel.

Associate Professor
Richard J. Onorato:
Modern literature.

Assistant Professor
John Burt:
American literature.

Assistant Professor
Lennard Davis:
Eighteenth century
and critical theory.

Assistant Professor
William Flesch:
Renaissance.

Assistant Professor
Anne Janowitz:
Romantic and modern
poetry; film.

Assistant Professor
Helena Michie:
Nineteenth century
literature and feminist
criticism and theory.

Assistant Professor
Paul Morrison:
Modern poetry.
Critical theory.

Lecturer
Scott Derrick:
American literature;
masculinist theory.

Writer-in-Residence
Jayne Anne Phillips:
Fiction.

Writer-in-Residence
Geoffrey Wolff:
Fiction.

Degree Requirements

Following are the degree requirements for the Department of English and American Literature. Students should also consult the General Degree Requirements and Academic Regulations found in an earlier section of this catalog.

Master of Arts

Program of Study.	Each student will take English 200a. In addition, a normal program will consist of five courses, at least three of which will be 200-level seminars. Students must also register for English 295b (Major Text Examination).
Residence Requirement.	The minimum residence requirement is one year, though students with inadequate preparation may require more.
Language Requirements.	A reading knowledge of a major foreign language (modern European, ancient Greek, Biblical Hebrew or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.
Qualifying Examination.	An examination, oral and written, will be given by committees of faculty members, at the beginning of the spring term on one of several major texts, the texts to be announced at the end of the fall term. This examination will test a student's ability to read and understand a major literary work or a group of short works by the same author. Admission to the Ph.D. program in addition to qualification for the M.A. degree will depend upon the results of this examination, in addition to course evaluation.

Doctor of Philosophy

Admission to Ph.D. Program.	(1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. program by the Department upon recommendation of the Committee on Graduate Studies. (2) Students who enter with a master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination requirement described above under the Master of Arts Program. Provided this requirement is fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission up to a year's residence and course credit for work completed elsewhere may be granted.
Program of Study.	Second year students continue to take courses, usually two a semester. Students have an obligation to review their preparation in the field with their advisers and to ensure that they are acquiring both a comprehensive knowledge of the various historical periods and genres of English and American literature and a more profound knowledge of the particular period or field they propose to offer as a specialty. With the exception of English 200, no specific courses are required of all Brandeis Ph.D. candidates; each student's program will be designed in the light of the strengths and weaknesses of his or her previous preparation and in accord with his or her own interests.

Dissertation Field Examination.

A student who comes to Brandeis with a B.A. is required to take 12 courses for the Ph.D.; a student who comes with an M.A. is normally required to take 8 courses at Brandeis.

All candidates for the Ph.D. will be asked to pass an oral examination in the historical period or genre in which the candidate expects to write a dissertation. This examination is taken in the third year. The examination may be taken as many times as necessary without prejudice to a student's standing in the Ph.D. program.

Residence Requirement.

The minimum residence requirement is one year beyond the master's degree or two years beyond the bachelor's.

Other Requirements

Language Requirement.

In addition to the language requirement that has been met for admission to the Ph.D. program, the student must (1) demonstrate a reading knowledge of a second major foreign language; or (2) demonstrate an advanced competence in the first foreign language and a knowledge of its literature; or (3) take a graduate course, ordinarily a seminar, in a field closely related to research on the dissertation. Approval of the graduate committee must be sought before such a course is taken; the students must demonstrate the relevance of the proposed course to the dissertation.

Training in Teaching.

Provided openings exist, students in their second and third year in the program can expect to be awarded at least one teaching assistantship each year, provided their academic work is of high calibre.

Admission to Candidacy.

A student will be recommended by the Department for admission to candidacy for the Ph.D. degree after completing with distinction the program of study and satisfying all departmental requirements prior to the writing and defense of a dissertation. A student admitted to candidacy must have submitted a formal dissertation proposal, subject to approval by the student's dissertation director and by an additional member of the departmental faculty.

Dissertation and Defense.

Each student will submit a dissertation in a form approved by his or her dissertation director and by a committee appointed by the Director of Graduate Studies. The student will defend the dissertation at a final oral examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project or a textual project.

Courses of Instruction

English 120b. The Tradition of the Short Poem in English	□ Not offered 1986-1987	English 128a. Ante-Modernism: Politics of an Ecstasy 1870-1914	□ Not offered 1986-1987 An attempt to identify those energies in Western culture which, between the Franco-Prussian War and the Great War, sought to articulate in all the arts — and in philosophy and science too—what was radically perceived as Unity of Being; such rhapsodic apprehensions of wholeness —euphoric, organic, oneiric — were to be drastically countered by what we now acknowledge as the necessities of Modernism: fragmentation, erasure, negativity, collage. (Principal figures: Nietzsche, Mallarme, Pater, Whitman and Wagner; but discussions will invoke work by Yeats and James, Materlinck and Chekhov; Monet, Rodin and Klimt; Freud, Bergson and Einstein; Isadora Duncan and Frank Lloyd Wright; Proust, Gide and Valery.)
English 122a. The Medieval World: Britain before the Conquest	An introduction to the language and literature of Anglo-Saxon. Readings will include selections from Bede, The Chronicle ; charms, riddles, the major extant short poems, and the epic poem Beowulf . Ms. Klein	English 128b. The Modernist Revolution	□ Not offered 1986-1987 A course in the literary revolution that created what we know as "modern literature," with an emphasis on the works of Yeats, Eliot, Pound, Frost, Williams and Stevens. We will look at major statements about the nature of poetry by these poets, as well as their major poems.
English 122b. The Medieval World: England from the Conquest to the Renaissance	A cultural study of this period with particular attention to the idealized fantasies, centering on the figure of Arthur, of the aristocratic class; the yoking of literary energies to intense religiosity; and the emergence of a literature reflective of wider urban and social realities. Readings will be drawn from history, Romance, lyric, drama and the poetry of Chaucer. Ms. Klein	English 130a. American Literature	□ Not offered 1986-1987
English 126a. American Realism and Naturalism 1865-1900	□ Not offered 1986-1987	English 130b. Cosmic Poetry: Vergil, Milton, Yeats	□ Not offered 1986-1987
English 127a. Joyce and Lawrence	□ Not offered 1986-1987 A study of the major work of the two great antithetic novelists of the modern period. Readings will include: Dubliners , Portrait of the Artist , Ulysses , Sons and Lovers , The Rainbow and Women in Love .	English 131b. Writing in the "Wild Zone": Charting Feminist Literary Theory	Feminism is accused of having no base in theory. While some feminists see the enabling possibilities of transcending traditional notions of "discipline," others are in the process of defining for feminism a theoretical territory on the margins of patriarchal culture. This course looks at the contributions of various theories to the feminist project, and examines, in turn, what feminism can suggest to Marxists, Freudians, deconstructionists and others. We will be using both "primary" and "secondary" sources including works by Rich, Gallop, Spivak, Gilbert and Gubar, and Daly. Ms. Michie
English 127b. Contemporary and Avant-Garde in Fiction	Against the background of the "modernism" of the earlier twentieth century, this course will consider the contemporary scene in fiction. The assimilation of earlier experimental techniques and attempts at continuing avant-gardism will be considered. American writers, writers in English from England and the several other English-speaking countries, and some writers in translation will be covered to show how central American writing has become to American readers and yet how international serious writing and reading has become in the wake of modernism. Mr. Onorato	English 132b. Chaucer	□ Not offered 1986-1987
		English 133a. Advanced Shakespeare	□ Not offered 1986-1987

English 134a. The Women of Letters in the Eighteenth Century	<input type="checkbox"/> Not offered 1986-1987	English 140b. Wordsworth and Yeats	<input type="checkbox"/> Not offered 1986-1987 A study of the careers, major poems, ideas and forms of these two poets. The work of art in its relation to experience and performance, sensation, and form, politics and personal history will be at the center of the intensive study of major poems.
English 135a. Wordsworth to Stevens: The Continuity of Romantic Poetry	<input type="checkbox"/> Not offered 1986-1987	English 141b. Literature and Masculinity	Masculinity is often ignored as a subject for serious study. To men, talk about masculinity constitutes an embarrassing exposure of a socially constituted identity which, for the sake of power and prestige, ought to be covered up. Since Hemingway, men don't talk about it. To feminism, masculinity represents power and oppression, but only a secondary subject for analysis. The purpose of this course will be to make it a primary focus, to develop a complicated notion of a male perspective in a world divided, in fundamental ways, along lines of gender difference. In this course, using important texts from all realms of literature and from psychology, feminism, and social history, we will ask what it means to be male and how masculinity affects literature. Texts will include: Plato, Book 10, <i>The Republic</i> ; Sophocles, <i>Oedipus Rex</i> ; Freud, <i>Three Essays on Sexuality</i> ; Rousseau, <i>Confessions</i> ; James, <i>The American</i> ; Whitman, <i>Song of Myself</i> ; Wordsworth, <i>The Prelude</i> ; Lawrence, <i>Women in Love</i> ; Mailer, <i>An American Dream</i> ; Genet, <i>Our Lady of the Flowers</i> ; Woolf, <i>Orlando</i> .
English 135bR. Romanticism	Major poetic texts by Blake, Wordsworth, Coleridge, Keats, Shelley and Byron, with some attention to their prose, and to Dorothy Wordsworth's <i>Journals</i> and Mary Shelley's <i>Frankenstein</i> . Our purpose is both to define the common ground of the Romantics' poetic, political and philosophic goals, and to determine the singularity of each writer's achievement. Topics we will address include: Romantic genres, the "Romantic Woman," Romantic Medievalism and Orientalism, and the relationships between the "visionary" and the "visual." Ms. Janowitz		
English 136a. Whitman and his Archive	<input type="checkbox"/> Not offered 1986-1987		Mr. Derrick
English 137a. Twentieth Century Poets	<input type="checkbox"/> Not offered 1986-1987		
English 137bR. Samuel Beckett	<input type="checkbox"/> Not offered 1986-1987	English 143a. Elizabethan and Jacobean Drama	A study of the Revenge tradition in the work of Shakespeare and his contemporaries. The problem of blood-revenge will be looked at as an historical phenomenon in Renaissance society and as a social threat transformed into art in such dramatists as Shakespeare, Marlowe, Kyd, Marston, Tourneur, Chapman and Webster.
English 138a. Fiction and Social Change	What is the relationship between fiction and social change? We will read and discuss major works of fiction in both the English and American Traditions that deal with social mobility, race and colonialism, industrialization, marriage and class. We will explore the cultural similarities and differences reflected in the works drawn from the two traditions. Texts will include Austen, <i>Pride and Prejudice</i> ; Dickens, <i>Great Expectations</i> ; Twain, <i>A Connecticut Yankee in King Arthur's Court</i> ; James, <i>Washington Square</i> ; and Fitzgerald, <i>The Great Gatsby</i> . Messrs. Gilmore and Goodheart		Mr. Levitan
English 138b. Poetry and Religion	<input type="checkbox"/> Not offered 1986-1987	English 143b. English Drama before Shakespeare	<input type="checkbox"/> Not offered 1986-1987
English 140a. Vehemence and Wonder: Philosophical Components of Literature	<input type="checkbox"/> Not offered 1986-1987	English 145b. Victorian Poetry and Poetics	This course will examine major nineteenth century poetic texts in the context of the social, religious, class, scientific, urban and sexual crises of the Victorian period. Focus on works by Tennyson, the Brownings, Arnold, Clough, the pre-Raphaelites, Hopkins. Topics will include Victorian medievalism and Hellenism. poetic texture and form, relations between poetry and painting, class and gender in narrative poems, "voice" in the Victorian lyric. Ms. Janowitz
		English 147a. Faulkner, Fitzgerald and Bellow	<input type="checkbox"/> Not offered 1986-1987

English 147bR. Modern British and American Drama	The emphasis in this course will be upon the American Realistic tradition—including O'Neill, Williams, Albee, Miller and Shepard—but comparisons will be made to Pinter, Stoppard and other contemporary British dramatists. Mr. Swiggart	English 157aR. The Post-Modern Generation: Contemporary Poetry	An introduction to recent poetry in English, dealing with a wide range of poets as well as striking and significant departures from the poetry of the past. We will look, where possible, at individual volumes by each author—the list will probably include Robert Lowell, Elizabeth Bishop, Allen Ginsberg, Frank O'Hara, John Ashberry, Sylvia Plath, Adrienne Rich, James Merrill, Allen Grossman, Seamus Heaney, Louise Glück, Robert Pinsky and Michael Palmer. Mr. Bidart
English 148b. Classical Background of English Literature: Epic and Pastoral Poetry	<input type="checkbox"/> Not offered 1986-1987 Selected Greek and Latin works in translation and comparable English poems. (Homer, Theocritus, Vergil, Spenser, Milton, Pope, etc.)	English 157b. Modern British Drama and Theatre	<input type="checkbox"/> Not offered 1986-1987
English 151b. Contemporary Critical Theories: The Politics of Criticism	<input type="checkbox"/> Not offered 1986-1987 A course in reading and writing analytic prose. We will begin by looking at Thoreau's <i>Walden</i> as a representational structure and as a strategy of rhetorical entanglements designed to challenge readers by disrupting their habits of dealing with texts. That will allow us to deal the ways strong writing "educates" its audience and promotes competing interpretations. Our overall concern is to understand how reading asserts influence and what critical writing can (and cannot) accomplish.	English 158a. American Poetry	<input type="checkbox"/> Not offered 1986-1987
English 153aR. Poetry, Philosophy and Politics in the Seventeenth Century	The period from the first production of Shakespeare to the Glorious Revolution saw enormous changes in the way people in England reflected upon what it meant to be human, and on what it meant to be English; these changes were mirrored in the literature, politics and philosophical writings of the time. We will attempt to chart and correlate some of these changes, looking at debates in prose, but also in poetry, between Puritans and Cavaliers, and at the philosophical instigators and/or consequences of these debates. Mr. Flesch	English 163a. Renaissance Poetry	In this course we will be concerned primarily with the kind of lyric first written by Wyatt, and evolved and extended by Sidney, Spenser and Shakespeare (particularly the sonnets); and with its sometimes surprising elaborations in the work of seventeenth century poets, mainly Donne, Herbert, Milton and Marvell. Mr. Flesch
English 153b. Milton	<input type="checkbox"/> Not offered 1986-1987 This course contemplates Milton primarily as the author of <i>Paradise Lost</i> . We will also read Milton's other major works, <i>Lycidas</i> , <i>Paradise Regained</i> , <i>Samson Agonistes</i> , as well as some of his shorter poems and some selections from his prose, in order to understand his stake, both political and poetic, in his own writing.	English 164b. Restoration Drama	<input type="checkbox"/> Not offered 1986-1987
English 155b. Lawrence and the Moral Tradition	<input type="checkbox"/> Not offered 1986-1987	English 165a. Social Novel in the Nineteenth Century: Self and Society in the English Novel	<input type="checkbox"/> Not offered 1986-1987
		English 167a. Self-Critical Fictions	<input type="checkbox"/> Not offered 1986-1987 In recent years, criticism has grown both more independent of literary texts and more profoundly conscious of its own literary nature. We will explore this developing awareness in the work of several contemporary novelists: E.L. Doctorow, John Barth, Jerry Kosinski, Robert Persig, Donald Barthelme.
		English 167b. Contemporary Poetry: Poets and Poetry: Theory and Practice	<input type="checkbox"/> Not offered 1986-1987
		English 174bR. Eighteenth Century Novel	Early developments in English fiction with some attention to theories of narrative and problems in the practical criticism of the novel. Emphasis on Defoe, Richardson, Fielding, Sterne and Austen. Mr. Davis

English 175b. City and Psyche in Victorian Literature	<p>□ Not offered 1986-1987</p> <p>An examination of the shock of urban living on early inhabitants of industrialized society. The course will cover rural and small-town experience, life in London and, finally, sea adventures and English contact with the "third world." Writers include Mrs. Gaskell, Dickens, Gissing, Hardy, Trollope, Eliot, Conrad, Stevenson, Kipling.</p>	English 187a. The Modern Novel I	<p>A course in the major novelists of the early twentieth century, stressing their experiments with subject matter, narrative technique, and prose style that resulted in the distinctly twentieth-century sense of the "modern" fiction. Among the writers to be included are Conrad, Joyce, Lawrence, Woolf, Hemingway and Faulkner.</p> <p>Mr. Onorato</p>
English 176a. Hawthorne and Melville	<p>□ Not offered 1986-1987</p>	English 187b. The Loss of the Common World: A Study of Conrad, Wittgenstein and Freud	<p>□ Not offered 1986-1987</p>
English 176b. Hawthorne, Melville and Poe	<p>□ Not offered 1986-1987</p> <p>Readings will include <i>Moby Dick</i>, <i>The Narrative of Arthur Gordon Pym</i>, <i>The Scarlet Letter</i> and <i>The Marble Faun</i>, as well as short novels by all three authors.</p>	English 188a. Country and City in British Literature	<p>The course will study a range of poetry and novels that reflects the British preoccupation with the rural and the urban as contrasting modes of experience. In concentrating on literature of the 17th, 18th and 19th centuries, the period of the great agricultural and industrial revolutions, we will be centrally concerned with the relationship between literary and historical change. How did socio-economic transformation—changes in the land and landscape, social mobility, the growth of London and industrial capitalism—affect the transformation of pastoral poetry, the development of the novel, the emergence of the Romantic movement? Among our authors will be Jonson, Milton, Marvell, Swift, Pope, Smollett, Goldsmith, Boswell, Crabbe, Blake, Wordsworth, Dickens, Hardy. Also some correlative readings in the historical context.</p> <p>Mr. McKeon</p>
English 177a. American Gothic and American Romance	<p>This course examines Gothic fiction as method of exploring the capacities of the imagination, disclosing its power, and meeting its threat. We will begin with the nineteenth century founders of the genre in America: Brown, Poe, Hawthorne, Melville, and James. The second half of the course will deal with some twentieth century masters: Faulkner, Warren, O'Connor, Oates, and McCarthy.</p> <p>Mr. Burt</p>	English 197aR. Political Poetry	<p>The aim of the course is to inquire into the meaning, and the necessity, of this category. When and why did the idea of "political poetry" come into currency? What kinds of poetic—and political—purposes does it seem to serve in the contemporary cultural milieu? Why does the idea of political poetry seem a contradiction in terms? Can we conceive of standards of political and poetic evaluation that are complementary rather than antithetical? What are the formal procedures and strategies that might be said to distinguish the "poetics" of political poetry? Our inquiry into these questions will be guided by readings in the poetry itself—primarily contemporary and modern, but also poetry of earlier periods. Among the poets we will read are: Margaret Atwood, W.H.Auden, Imamu Amiri Baraka, Elizabeth Bishop, Robert Bly, Bertolt Brecht, Rupert Brooke, Gwendolyn Brooks, Olga Broumas, John Donne, John Dryden, Carolyn Forché, Nikki Giovanni, Allen Ginsberg, Denise Levertov, Mao Tse-tung, Andrew Marvell, Claude McKay, W.S. Merwin, John Milton, Pablo Neruda, Sharon Olds, Wilfred Owen, Adrienne Rich, Muriel Rukeyser, Gary Snyder, Jonathan Swift, Virgil, Walt Whitman, William Wordsworth, W.B. Yeats and Yevgeny Yevtushenko. We may also read some prose reflections on "political poetry."</p> <p>Mr. McKeon</p>
English 177b. Contemporary Women Writers	<p>□ Not offered 1986-1987</p> <p>This course studies poetry and prose by women from the 1940s to the present day in terms of socio-cultural content, literary traditions, and feminist criticism. Among the authors read are Lessing, Olsen, Walker, Morrison, Gordimer, Plath, Bishop, Olds, Levertov, Hawley, Broumas. Significant writers from earlier in this century may also be included.</p>	English 180a. The Modern American Short Story	<p>Although this course will have occasional reference to Kafka, Chekov, Frank O'Connor and Pinter, its focus is the American story, most particularly in its twentieth century evolutions. We will read Hawthorne, Melville and James to prepare for our study of Fitzgerald, Hemingway, Faulkner, Anderson, Flannery O'Connor, Cheever, Roth, Malamud, Gass, Barth, Elkin, Beattie, Carver, Jayne Anne Phillips, Hannah, Yates, Updike and others. The development of a genre will be investigated by close attention to matters of craft: narrative design, point of view, voice, exclusion, time and transition, inference, syntax. Two critical papers will be required together with a final examination.</p> <p>Mr. Wolff</p>
English 185aR. Dickens and Dostoevsky	<p>See Comparative Literature 185aR.</p> <p>Mr. Miller</p>		

<p>English 197b. The Political Novel in the Twentieth Century</p>	<p>Defining politics as strategies of power, we will look at these strategies in sexual, racial, economic and ideological terms as they are represented in primarily British and American novels of the twentieth century. Beginning with the works of Conrad and Kafka, whose interests and explorations opened the novel to overtly political themes, we will read novels by Orwell, Koestler, Golding, Greene, Lessing, Gordimer, Coetzee, Naipaul, Walker, Doctorow, Kundera. We will focus on literary responses to various systems of oppression and literary depictions of the body in public and institutional spaces, such as prisons and hospitals, rather than private and domestic spaces, the more usual locus for narrative.</p>	<p>to the voyeur-reader outside the fiction? What is learned through breaches in decorum whereby public realms are converted to secrecy and private realms are subject to gossip, publicity, blackmail (or its opposite, libel), sometimes with assistance from ever-increasing "documentation" (including wills, contracts, letters) from various "pasts unknown hitherto to "outsiders? What specifically is the connection between espionage fictions, detective fictions and other techniques for converting past information, located in a fictional present, into the shaping of future destinies? What can replace the omniscient author and the notion of a "knowable" community or society?</p>
	<p>Ms. Klein</p>	<p>Mr. Preyer</p>
<p>Seminars</p>		
<p>English 200a. Methods of Literary Study</p>	<p>Traditional methods and projects of literary study, including research into literary history and criticism, finding of manuscripts and rare books, and scholarly editing. This year students will not solve again problems which have already been solved, but will work collectively to do original work on a neglected eighteenth-century woman writer, probably Elizabeth Griffith. The argument will be advanced that valid work in literary theory and criticism still depends on the adequacy and accuracy of such traditional scholarship. Required of all first-year students, open to others.</p>	<p>English 241a. Structuralism and Post-Structuralism</p> <p>This course will be organized around the crises of signification, subjectivity, meaning, and value as they are tentatively embodied in the works of theorists from Levi-Strauss and Barthes to Lacan, Irigaray, and Derrida.</p> <p>Our discussion will focus primarily on two recurring problems: the status of the real, the self, and realism, for which we will read some theoretical texts; and the intersection of the political and the linguistic, for which, as test cases, we will be reading contemporary poetry by women and by sexual and racial minorities.</p>
	<p>Ms. Staves</p>	
<p>English 234b. Eighteenth Century Novel</p>	<p>The works of two novelists, Defoe and Richardson, will be studied in depth along with biographical and historical materials. In addition, students will use modern critical methodology—including psychoanalytic, structuralist, and Marxist—to illuminate the narrative techniques of plot, character, dialogue, and setting.</p>	<p>English 243b. Sonnets and Lyrics: Tudor and Elizabethan</p> <p>This course will study the short poem between 1520 and 1600, in both the native tradition and the tradition of Italian influence. The major figures to be read include John Skelton, Wyatt, Surrey, Sidney, Spenser, Shakespeare, Campion, the writers of airs and madrigals, Jonson, and the early Donne. Among the motifs to be examined are the development of the sonnet, the use of <i>persona</i>, Renaissance musical realization of lyric texts (Dowland, Campion, the madrigalists), the individualization of diction and metaphor, the satiric voice.</p>
	<p>Mr. Davis</p>	<p>Mr. Levitan</p>
<p>English 235b. Fusing Private and Public Destinies</p>	<p>This seminar will examine a number of significant 19th-century fictions—in verse and prose—in an effort to locate more precisely the significance of changing patterns in the representation of public and private aspects of experience. Among the works to be studied: a novel by Scott (<i>Old Mortality</i> or <i>Heart of Midlothian</i>); Dickens (<i>Our Mutual Friend</i> and/or <i>Little Dorrit</i>); Thackeray's <i>Henry Esmond</i>; A.H. Clough <i>Amours de Voyage</i>; Tennyson's <i>Maud</i> and/or Mrs. Browning's <i>Aurora Leigh</i>; a novel by George Eliot (either <i>Middlemarch</i> or <i>Daniel Deronda</i>); a "sensation" novel by Wilkie Collins; Conrad.</p>	<p>English 246aR. American Romantic Fiction: Precursors and Classics</p> <p>This course will examine the origins and flowering of romanticism in the American novel. Authors to be considered will include: Charles Brockden Brown, Washington Irving, James Fenimore Cooper, Nathaniel Hawthorne, Herman Melville.</p>
	<p>Participants in the seminar may write on other works but these will be investigated as a whole.</p> <p>Among the questions to be considered: How is the public or social world represented in fiction? How knowable is it? Psychological notation and the rendering of "inner consciousness"—What happens when such contents become available to other characters,</p>	<p>Mr. Gilmore</p> <p>English 257a. Yeats and Stevens</p> <p>Our project in this course is to read Yeats and Stevens, as far as possible, whole for whatever truth and pleasure is in them, and (secondarily) to acquire sufficient knowledge of the technical scholarship which now attends the study of these poets to validate such statements as we may wish to make about them. Stress will be put on the separate histories of poetic structure and philosophical understanding which produce the specific character of the Irish and American poet, and also on the solutions of each (in the light of</p>

their discrete cultural situation) to the problems which they face in common;—the imaging of persons, national identity in a post-colonial civilization, and the trans-national enigma of “modernism.” Yeats’ characteristic styles of construction—both metrical and philosophical—will (most likely) be seen to be substantiated and problematized in the intricately syncretic, millennial cultures of (transcendental) **pattern**, and Stevens’ (following Whitman, Santayana, and James) in the antithetical, archetypal strategy of the (immanent) matrix.

Mr. Grossman

356a and b.
Mr. Swiggart

357a and b.
Mr. Grossman

358a and b.
Mr. Gilmore

359a and b.
Ms. Klein

360a and b.
Mr. Levitan

361a and b.
Mr. Onorato

368a and b.
Mr. Burt

370a and b.
Mr. Davis

371a and b.
Mr. Flesch

372a and b.
Ms. Janowitz

373a and b.
Ms. Michie

374a and b.
Mr. Morrison

English 295b. Studies in a Major Text

Required of all first year students.

Mr. Goodheart

English 402-415. Dissertation Research

402. Mr. Goodheart
404. Mr. Preyer
405. Mr. Smith
406. Mr. Swiggart
407. Mr. Grossman
408. Mr. Gilmore

409. Ms. Klein
410. Mr. Levitan
411. Mr. Onorato
412. Mr. Staves
415. Mr. Fisher

English 351-374a and b. Directed Research

351a and b.
Mr. Hoover

362a and b.
Ms. Staves

352a and b.
Mr. Goodheart

365a and b.
Mr. Fisher

354a and b.
Mr. Preyer

367b.
Mr. Wolff

French

See Joint Program of Literary Studies.

German

See Joint Program of Literary Studies.

History

See Comparative History.

History of American Civilization

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed primarily to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European, Asian, Latin American or African history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. Training in one of the disciplines of the social sciences or humanities — politics, international relations, or literature, for example — to provide perspectives and methods that can illuminate historical problems.
2. A thematic field in American history, involving a distinctive subject matter and discipline: for example, American social history, American legal and constitutional history, American intellectual history, or American art and architecture.
3. A topic in comparative history, involving a distinctive subject matter and discipline: twentieth century British and American literature, for example, or nineteenth century emigration/immigration, or eighteenth century American and European political and social philosophy.

A small, select student body works closely with the faculty in independent reading and research courses. From the beginning, individual programs are developed to prepare

students for their qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research and a critical approach to problems of historiography. Second-year students, while pursuing further directed research, chiefly are encouraged to choose courses to complete their preparation in the examination fields. Studies in related fields are arranged individually with appropriate members of the University's graduate faculty, either through standard courses or directed readings. For selected students with appropriate qualifications, there are opportunities for advanced study and research with distinguished scholars at neighboring universities in such fields as legal history and business history. Applicants should note with care the four parts of the examination, specified under **Degree Requirements**, in which all students are expected to demonstrate proficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some fundamental courses in American history and related fields in the social sciences or humanities. Students with the M.A. in history, or a professional degree in law or other related fields, are especially invited to apply. Students interested in Crown Fellowships or in the special arrangements for study in professional fields at neighboring universities, noted above, should submit applications by February 15.

Faculty

Executive Committee and Staff

Professor
Donald Worster,
Chair: Environmental
history. Frontier and
West. Rural history.

Professor
**David Hackett
Fischer**:
Social and political
structure. Early
Republic.

Professor
Morton Keller:
Legal and political
institutions. Modern
America.

Associate Professor
Gerald S. Bernstein:
American art and
architecture.

Associate Professor
Christine Heyrman:
Community, religion
and economic colonial
America.

Associate Professor
Stephen Whitfield:
Modern America.
Cultural history.

Assistant Professor
**James T.
Kloppenberg**:
Modern intellectual
history.

Assistant Professor
David M. Scokey:
Modern American
urban history.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full year of residence at Brandeis University (eight half-courses), including two 200-level research courses, and (2) have passed the foreign language requirement.

Doctor of Philosophy

Program of Study.

Doctoral candidates must complete two years in residence at Brandeis, and a minimum of sixteen half-courses. Programs of study and concentration will be formulated for each student, subject to the approval of the Executive Committee. Students will be required to maintain an average of B- or better in order to continue in the program. Continuance of fellowship support requires an average of A- or better. Incoming students normally will be expected to take one full course of Directed Research in American History in their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for relevant graduate or professional work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program. The second 200-level Directed Research course may be waived by the committee on the basis of a master's thesis or comparable research project at the graduate or professional level done elsewhere.

Language Requirement.

A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed the foreign language examination by the end of the first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement.

Qualifying Examination.

Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history, one examiner will be in early American history and the other in modern American history; (2) a period of specialization in American history; (3) an area of comparative modern European, Asian, Latin American or African history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of specialization will normally be selected from the following: 1607-1763, 1763-1815, 1815-1877, 1877-1914, 1914-present. The special period may be redefined on request, for good academic reasons. All proposed fields must be submitted in writing and approved by the Executive Committee. Students entering the program without previous graduate training in

American history are expected to take the Qualifying Examination no later than the end of their fifth semester of residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere, or who have one year of transfer credit for work taken elsewhere, are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Unless the student elects a single three-hour oral examination on all four fields, the Qualifying Examinations will be taken separately in each of the fields, with the general American field coming at the end. For each of the fields (2), (3), and (4), as above, the student will choose one appropriate professor with the approval of the chairman of the program. That professor, in consultation with the student, will define the requirements, course of preparation, and mode of examination (written and/or oral) for the field.

For the general American field, the Chairman will appoint two members of the Executive Committee as examiners. The student may choose a one-hour oral examination or a three-hour written examination followed, if the examiners so require, by an oral examination. In either case, the two professors in consultation with the student will define in advance the major themes or problems on which the examination will be based. So far as possible, fields (3) and (4), as above, should be selected with a view to broadening and deepening the student's understanding of his or her American history fields, and providing valuable background for the dissertation work.

With the consent of the Chairman and the professor concerned, qualified students in appropriate cases may be examined in fields (3) or (4), as above, by a faculty member at another university. Moreover, with the consent of the Executive Committee, examinations in fields (3) or (4), as above, may be waived for students with the M.A., J.D., or other advanced degrees that represent a level or kind of training and achievement fully equivalent to those required in the Brandeis examinations for those fields.

Admission to Candidacy.

A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, the qualifying examinations, and when the prospectus for a dissertation is approved by the Executive Committee.

Dissertation and Defense.

When the dissertation is accepted by the Committee, a final oral examination will be scheduled at which the candidate must successfully defend his or her dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended the dissertation, he or she will give a public lecture.

Courses of Instruction

History 190a. **Historiography** □ Not offered 1986-1987

History 200a. **Colloquium in Early Modern Comparative History** An introduction to the major issues and methods in the social history of Europe in the early modern and modern periods.
Mr. Cohn

History 200b. **Colloquium in European Comparative History Since the Eighteenth Century** Comparative examination of major historical issues in Europe from the eighteenth through the twentieth centuries.
Mr. Schluher

History 202b. **Seminar in Comparative History: Town and Country** □ Not offered 1986-1987

History 203b. **Seminar in Comparative History: Death in History** □ Not offered 1986-1987

History 201aA-208aA. **Directed Research in American History** Students will normally elect one of the following in the fall term of the first and the second years. Each is designed to provide experience in designing, researching and writing a substantial essay of a monographic character, based on extensive use of sources. This is the equivalent of a full course and extends the due date for the final draft of the paper to March 1, to permit sufficient time for a major project. Specific research topics are selected by the student in consultation with the professor.

201aA. **Topics in American Art and Architecture** Mr. Bernstein

202aA. **Topics in Social History with Emphasis on the Early Republic** Mr. Fischer

203aA. **Topics in American History** Ms. Heyrman

204aA. **Topics in Modern America** Mr. Keller

205aA. **Topics in Modern Intellectual History** Mr. Kloppenberg

206aA. **Topics in Modern Urban History** Mr. Scobey

207aA. **Topics in Environmental History** Mr. Worster

208aA. **Topics in Modern American Cultural History** Mr. Whitfield

History 301-308. **Readings in the History of American Civilization** The following are available in either semester:
301a or b. Mr. Bernstein
302a or b. Mr. Fischer
303a or b. Ms. Heyrman
304a or b. Mr. Keller
305a or b. Mr. Worster
306a or b. Mr. Whitfield
307a or b. Mr. Kloppenberg
308a or b. Mr. Scobey

The following courses are offered on a regular basis to groups of students who wish to use them in order to prepare for their general examinations.

History 312-318. **Readings in the History of American Civilization**

312a or b. **American Social History, 1750-1850** Mr. Fischer

313a or b. **Colonial History, 1607-1750** Ms. Heyrman

314a or b. **Political History, 1870-present** Mr. Keller

315a or b. **American Intellectual History, 1870-present** Mr. Kloppenberg

316a or b. **American Urban History,** Mr. Scobey

317a or b. **Environment and History** Mr. Worster

318a or b. **American Cultural History** Mr. Whitfield

History 401-411. **Dissertation Research** 401. Mr. Bernstein
402. Mr. Fischer
403. Ms. Heyrman
404. Mr. Keller
405. Mr. Worster
406. Mr. Whitfield

For courses available to History of American Civilization students in other historical areas, see the listings by department and programs in the Graduate School and College catalogs, especially under Comparative History.

In addition, the following courses may be taken as equivalent to History of American Civilization seminars:

History 150a. ☐ Not offered 1986-1987

**Colonial America:
People, Culture and
Society**

History 153b.
**The Origins of the
American South**

Ms. Heyrman

History 154b. ☐ Not offered 1986-1987

**The History of
Modern America**

History 156a.
**American Social
History, 1750-1860** Mr. Fischer

History 158a.
**Working Class
History in the
United States** Mr. Scobey

History 158b.
**The Twenties and
Thirties** Mr. Worster

History 159a.
**The History of
Urban America:
1865 to the Present** Mr. Scobey

History 159b. ☐ Not offered 1986-1987
**Family and Society
in American History**

History 161a. ☐ Not offered 1986-1987
**The American
Political Tradition:
Origins of the Civil
War**

History 161b. ☐ Not offered 1986-1987
The American Polity

History 162aR.
**Topics in Modern
Intellectual History:
From Liberal
Democracy to Social
Democracy** Mr. Kloppenberg

History 163aR.
**American Foreign
Relations in the
Twentieth Century** Mr. Schuker

History 167b. ☐ Not offered 1986-1987
**Topics in American
Legal History**

History 169a.
**Thought and
Culture in Modern
America** Mr. Kloppenberg

History 191a. ☐ Not offered 1986-1987
**History and
Psychology**

History 192b.
**The Evolution of
Early America** Ms. Heyrman

American Studies
101a.
**Ecological History of
North America** Mr. Worster

American Studies
133bR.
The American West Mr. Worster

American Studies
185bR.
**American Political
and Social Thought
since World War II** Mr. Whitfield

International Economics and Finance

Objectives

The Lemberg Program in International Economics and Finance, to be launched in September 1987 on the graduate level, will offer an innovative master of arts degree for students planning careers in international economics, business and finance. Drawing on the strengths of traditional management and international relations curricula, the program will combine advanced technical studies in international economics and finance with broad preparation in the political, historical and cultural aspects of international economic relations.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students should have an undergraduate major in economics, including introductory economics, intermediate microeconomics, statistics, courses in international politics and history. They should also have attained a high level of proficiency in a foreign language important in international commerce.

Faculty

Professor
Robert Evans, Jr.
Chair:
Japan.

Visiting Professor
Robert Aliber:
International
economics and
finance.

Professor
Anne P. Carter:
Technology transfer.

Professor
F. Trenery Dolbear,
Jr.:
Macroeconomics.
Theory and computer
simulations.

Visiting Professor
Evsey Domar:
Soviet economics.

Professor
**Charles
Kindelberger:**
International finance.
Financial history.
Multinational
corporations.

Visiting Professor
Leonard Rapping:
International
monetary theory and
policy.

Professor
**Barney K.
Schwalberg:**
Soviet Union.

Professor
**Richard S.
Weckstein:**
Development. Law
and economics.
International trade.

Associate Professor
Peter A. Petri:
International trade.
Development. Japan.
Korea.

Assistant Professor
Stefan Gerlach:
International finance.
Macroeconomic
theory.

Assistant Professor
Gary Jefferson:
Open economy
macroeconomics.
China.

Assistant Professor
Arthur Lewbel:
Econometrics.
Demand theory.

Assistant Professor
Jeffrey Williams:
Financial markets.

Degree Requirements

Master of Arts

The Master of Arts degree will be awarded to those students who have successfully fulfilled the residence requirements set by the Graduate School, have completed an approved schedule of courses, and who have met all departmental requirements.

Residence Requirements.

Two years of full-time study at the normal course rate will be required. One semester of study — usually the fall term of the student's first year in the program, will be spent at a foreign university associated with the program.

Language Requirement.

Candidates will be required to demonstrate a high level of proficiency in a foreign language relevant to their geographic area of interest.

Internship.

Students will have the opportunity to serve as interns with a business or governmental agency in the summer preceding their fall term abroad.

Thesis.

A master's project involving a one-semester thesis, or a report on an appropriate internship must be submitted no later than April 15 of the year in which the degree is to be conferred.

Applicants wishing more detailed information concerning degree requirements and courses of instruction, should write to the Lemberg Program in International Economics, Department of Economics, Brandeis University, Waltham, Massachusetts 02254-9110.

Joint Program of Literary Studies

Comparative Literature, French, German, Russian and Spanish

Objectives

The joint program of literary studies accepts students desirous of obtaining an M.A. and/or Ph.D. degree in one of the areas listed above. Interdisciplinary in design, the program aims to train literary scholars and teachers whose professional capabilities will be broader than their individual specialties. Students will have the opportunity to study the theory of literature, history and theory of literary criticism, and scholarly methodology in addition to the specific literatures in which the degree will be earned. A small and carefully selected student body will work closely with the faculty of the program and with one another in a core curriculum before specializing. Students are encouraged to plan an individual program of studies within their field of interest in consultation with their adviser(s). Although the program encourages individual initiative, with the advice and consent of adviser(s), it should be stressed that all students, whatever their areas, must master the basic literature, primary and secondary, in their field. The General Examinations will assume both breadth and depth of such knowledge. (Reading lists for each area are available.)

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program. Applications must be received no later than March 1. Please be sure to mark clearly the area of your choice (Comparative Literature, French, German, Russian or Spanish) on the application form. Each applicant must submit one or more college-level essays on a literary subject (one of which should be written in English) as a sample of work.

Faculty

Committee:	Professor Robert Szulkin , Chair (Russian)	Professor Edward Engelberg (Comparative Literature)	Professor Murray Sachs (French)	In addition, all faculty members of the Departments of Germanic and Slavic Languages and Romance and Comparative Literature participate in this program.
		Professor Luis E. Yglesias (Spanish)	Professor Harry Zohn (German)	

Degree Requirements

Master of Arts

Students who have completed two years of full-time study in residence may be awarded the M.A. degree. Such students must be in good standing (no incompletes). In addition, such students must have passed the language requirement, either by certification and/or examination, as follows: single area candidates **one** foreign language **other** than the major language. Finally, such students must have passed satisfactorily the Qualifying Examinations.

Doctor of Philosophy

Program of Study.

Individual programs of study will be arranged between students and their advisers. The core curriculum consists of several elements: all students in the program are obligated to enroll in Literary Studies 201 (The History and Theory of Criticism); all students will be held responsible for certain works on literary theory, literary history and aesthetics (not studied in the criticism seminars) at the time of General Examination.

Although the program is designed to permit students to develop their studies coincident with their interests and talents, and in consultation with their adviser(s), full-time students are expected to enroll in at least **three** literary studies seminars each year during the first two years of residence. In addition to Literary Studies 201, first-year students are expected to augment this schedule with at least two additional seminars from the literary studies offering.

Residence Requirements.	The minimum residence requirement is two years of full-time study beyond the bachelor's degree. Additional course work during the third year is generally recommended.	Dissertation and Defense.	The completed dissertation must be read and found acceptable by its director and two other readers before the candidate is eligible for the Final Oral Examination. The Final Oral Examination will be conducted by a committee of not less than four, one of whom must come from outside the candidate's area.
Language Requirement.	Students will be asked to demonstrate a reading competence in at least two foreign languages to be determined in consultation with their advisers. In certain areas of specialization, additional languages (e.g., Latin) may become necessary research tools. (Comparative literature students should consult the special statement of language requirements below.) Students must be certified in at least one language by the end of the first year in residence.	Teaching	All students in the program are expected to do some supervised teaching, either as a teaching assistant or by means of other arrangements. In some areas, where teaching assistantships may at times be unavailable, students will be expected to fulfill some teaching opportunities (occasional class lectures, for example) without remuneration.
Qualifying Examinations.	Qualifying examinations must be taken at the start of a student's second full year in residence, with the purpose of determining that the student is qualified to study literature productively at the graduate level. Only students who have a complete and satisfactory record for their first year will be permitted to take the Qualifying Examinations. No postponement of these examinations is allowed. The examinations are both written and oral, and will be scheduled each year for the third or fourth week in September. The examinations are prepared and conducted by a three-member faculty committee chosen at the end of the first year of study by the candidate in consultation with the candidate's faculty adviser. At the outcome of the examination, the candidate receives a detailed written evaluation from the three-member committee, based on the written and oral performances and on the entire record of the candidate's first year in residence.	For Candidates in Comparative Literature.	<p>1. Any student in the program who declares candidacy in comparative literature should decide, as soon as possible, on a major and minor literature. The major literature must be one of those offered by either the Department of Germanic and Slavic Languages or Romance and Comparative Literature (but not Italian). The minor literature may be Italian, English, American or any other literature offered by the University. Exact "proportions" cannot be stated in advance and will be worked out in consultation between students and adviser(s).</p> <p>2. Candidates in comparative literature are expected to take three language examinations as follows:</p> <p>a. The major language, which should be near level of mastery (reading, writing and speaking) on acceptance to the program. Students may simply be "certified" for this language if their level of competence is obvious.</p> <p>b. The second foreign language should be mastered as a reading language with a fluency that will permit easy access to all primary and secondary literature in the specified area.</p> <p>c. The third foreign language should be a reading tool for primary and especially secondary materials.</p> <p>It is quite possible that for certain areas of specialization — Medieval, Renaissance, etc. — additional languages will become necessary (e.g., Latin, Catalan, Old French).</p>
General Examinations.	Students may take the General Examinations, which demonstrate full competency in their chosen discipline, whenever they and their advisers feel they can appropriately do so. However, all students are expected to have completed the General Examinations no later than the fall semester of their fourth year in residence. Examinations will be offered twice each academic year, in October and May, and will consist of three written examinations and an oral examination. Details about the contents and procedures are available on request.		
Admission to Candidacy.	Candidates will be recommended for admission to doctoral candidacy when the residence and language requirements have been met, the General Examinations have been successfully passed, and a prospectus of the candidate's proposed dissertation topic has been approved by a committee of the area concerned.		

Courses of Instruction

Literary Studies 201a. History and Theory of Criticism: The Development of Modern Critical Theories Mr. Gendzier	Literary Studies 213b. □ Not offered 1986-1987 Modes of the Grotesque in Art and Literature
Literary Studies 202b. Fiction: Theory and Practice Mr. Sachs	Literary Studies 214a. □ Not offered 1986-1987 Biography- Autobiography and Related Genres
Literary Studies 203a. □ Not offered 1986-1987 Romantic Phenomena	Literary Studies 301- 305. Readings in Area Studies: Tutorials
Literary Studies 204a. Theory and Practice of Literary Translation Mr. Zohn	301a and b. Comparative Literature. Readings in Comparative Texts Mr. Engelberg and Staff
Literary Studies 205a. □ Not offered 1986-1987 Crosscurrents in the French and English Enlightenments	302a and b. French. Readings in French Texts Mr. Sachs and Staff
Literary Studies 206b. □ Not offered 1986-1987 The Comic in Literature: Theory and Practice	303a and b. German. Readings in German Texts Mr. Zohn and Staff
Literary Studies 207a. □ Not offered 1986-1987 Marxist Criticism: Literature and Society in Early Modern Europe	304a and b. Russian. Readings in Russian Texts Mr. Szulkin and Staff
Literary Studies 208b. □ Not offered 1986-1987 Cervantes in his European Context: Heritage and Lineage	305a and b. Spanish. Readings in Spanish Texts Staff
Literary Studies 209a. □ Not offered 1986-1987 Modern Phenomena: European Symbolism	Literary Studies 351-355. Directed Research Open to advanced graduate students with the consent of the instructor and the chairman of the Literary Studies Program.
Literary Studies 210b. □ Not offered 1986-1987 Genesis and Development of a Myth: Don Juan	351a and b. Comparative Literature Mr. Engelberg and Staff
Literary Studies 211a. □ Not offered 1986-1987 The Tragic in Literature	352a and b. French Mr. Sachs and Staff
Literary Studies 212b. □ Not offered 1986-1987 Techniques of Stylistic Analysis	353a and b. German Mr. Zohn and Staff
	354a and b. 3Russian Mr. Szulkin and Staff
	355a and b. Spanish Staff
	Literary Studies 400. Dissertation Research Staff

Following is a list of selected courses in each of the areas that constitute the Joint Program of Literary Studies, which may be of special interest to graduate students. For a full list of all courses available consult the undergraduate catalog under departments of Germanic-Slavic Languages and Romance and Comparative Literature.

Comparative Literature

Comparative Literature 102a.
Mythology in Medieval Literature

This course examines the tensions between pagan literature and Christian theology in the early and high Middle Ages and their resolution through moralized versions of classical myth. Readings in St. Augustine, *The Song of Roland*, Chretien de Troyes, the *Romance of the Rose*, Dante, Petrarch, *Sir Gawain and the Green Knight* and Chaucer.

Ms. Perry-Buxton

Comparative Literature 103b.
Madness and Folly in Renaissance Literature

□ Not offered 1986-1987

A study of the theme of madness and folly as exemplified by the major writers of the Renaissance, including Erasmus, Rabelais, Montaigne, Boccaccio, Ariosto, Shakespeare, Jonson and Cervantes.

Comparative Literature 104a.
At the Threshold of the Modern World

The challenge to social constraints and the emergence of a new world-view in the West. How early modern literature treated issues of the self, social and sexual relations, women, religion and the philosophical spirit. Readings in Molière, Pascal, Descartes, Aphra Behn, Jonson, Fontenelle, Mme. de Lafayette, Defoe.

Ms. Harth

Comparative Literature 105b.
Sex and Sensibility in Pre-Revolutionary European Novels

This course will study the concept of human nature with specific attention to whether people can be educated to control or influence their erotic feelings and states of happiness. We shall trace the roles of family, money, personal identity and social norms in structuring the eighteenth-century novel. The course will focus on the birth of the novel and of romanticism. Required texts: Richardson, *Clarissa*; Fielding, *Tom Jones*; Sterne, *Tristram Shandy*; Diderot, *The Nun*, Rameau's Nephew; Rousseau, *Julie or the New Heloise*; Goethe, *Werther*; Laclos, *Dangerous Liaisons*; Sade, *Justine*.

Mr. Gendzier

Comparative Literature 106a.
The Age of Contraries: European Romanticism

□ Not offered 1986-1987

Literature and parallels in painting and music. The Romantic tendency to posit problems and solutions in terms of contraries: art and nature, love and death, energy and exhaustion, devotion and revolt, form and formlessness, ecstasy and despair, sentiment and irony. English Romantics, Goethe, Baudelaire, Dostoevsky, Nietzsche, Mann, Blake, Friedrich, Constable, Turner, Gericault, Schubert, Berlioz, Gounod, Wagner.

Comparative Literature 121b.
Dancing the Orange: Studies in Poetic Resonance

□ Not offered 1986-1987

Comparative Literature 125a.
Women in Literature

A study of cultural and personal assumptions writers bring to their characterizations of women. Works by women authors are emphasized.

Ms. Collard

Comparative Literature 127b.
The Rise of the Modern Short Story

□ Not offered 1986-1987

Comparative Literature 137a.
Dada and Surrealist Practice

□ Not offered 1986-1987

The Dadaists first assaulted bourgeois society in Zurich before World War I. Their provocative and humorous diatribes were employed by Dada-Surrealists in Berlin, New York and Paris. We shall examine their manifestos, literature, art and films which display a rebellious spirit extolling the liberated subconscious, the values of spontaneity and authenticity, the joys of love and freedom.

Comparative Literature 144b.
The Outsider as Artist and Lover

□ Not offered 1986-1987

Comparative Literature 145a.
In Praise of Folly

□ Not offered 1986-1987

Comparative Literature 150a.
The European Novel I: Realism

A study of major European novels of the eighteenth and nineteenth centuries which were especially influential in shaping a new tradition in the art of fiction: the novel of realism. The development and evolution of the novel of realism will be traced through the close reading of novels by such authors as: Laclos, Jane Austen, Balzac, Dickens, Flaubert, Caldos, Tolstoy, Zola, Fontane.

Mr. Sachs

Comparative Literature 151b.
The European Novel II: Modern Period

This course examines one of the major motifs (and the fictional techniques that define it) in modern European novel: time and memory. We shall examine novelistic devices such as "modernized" myth, "stream of consciousness," parallel and multiple "plots," reordering of narrative. Texts: Proust's *Swan's Way*, Joyce's *Portrait of the Artist as a Young Man*, Mann's *The Magic Mountain*, Woolf's *Mrs. Dalloway*.

Mr. Engelberg

Comparative Literature 174a. Sex, Class and Literature in Europe, 1830-1914	<input type="checkbox"/> Not offered 1986-1987 Social change and literary production in Europe during a period of political and industrial revolution. Issues of sexual and social relations, women and class, as they are treated in capitalist and socialist ideologies respectively. Authors to be studied include Brontë, Flaubert, Engels, Gissing, Freud, Shaw, Gorky, Stein.	French 112a. The French Middle Ages	<input type="checkbox"/> Not offered 1986-1987 This course will explore the representative examples of medieval epic, courtly romance, allegory, lyric poetry and theater. Emphasis on modes and structures of medieval imagination, mirroring social, spiritual and aesthetic values. Texts in modern French.
Comparative Literature 175b. The Psychological Novel	<input type="checkbox"/> Not offered 1986-1987	French 116b. The French Renaissance	An exploration of the themes of alienation and exile in relation to the role of classical texts, women writers, and protestantism in the development of French Renaissance literature. Readings will include works by Marot, Scève, Du Guillet, Labé, Marguerite de Navarre, Rabelais, Du Bellay, Ronsard, Montaigne, D'Aubigné. Ms. Perry-Buxton
Comparative Literature 185aR. Dickens and Dostoevsky	This course will consider such issues as narrative technique, literary realism, and the manipulation of the grotesque and the sublime in representative works of Dickens and Dostoevsky. Because Dostoevsky was an avid reader of Dickens, we shall address the question of literary influence, particularly with regard to their shared thematic interests: e.g., the rise of the modern city and the depiction of childhood. Mr. Miller	French 117a. French Classicism	<input type="checkbox"/> Not offered 1986-1987
Comparative Literature 193a. Native American Literature	<input type="checkbox"/> Not offered 1986-1987	French 118b. The French Enlightenment	The origins of Romanticism and Realism; modern notions of tolerance, the pursuit of happiness, feminism; conflicts between primitivism and progress, rationalism and experience, secular humanism and religious morality. These themes will be analyzed in such writers as Cyrano de Bergerac, Fontenelle, Bayle, Montesquieu, Voltaire, Diderot, Rousseau and Sade. Mr. Gendzier
Comparative Literature 199b. The Roots of Literature	<input type="checkbox"/> Not offered 1986-1987 An inquiry into the origins of literature as revealed by ancient and modern myths and texts.	French 119a. French Romanticism	The Romantic Revolution dominated France during the first half of the nineteenth century. We shall study Victor Hugo's central contributions and principal works of fiction; poetry and drama by Balzac, Lamartine, Vigny, Musset. Selections from Baudelaire will exemplify the breakdown of French Romanticism. Mr. Kaplan
French		French 138b. Nineteenth Century French Fiction	<input type="checkbox"/> Not offered 1986-1987 By focusing on the great landmark achievements in the novel, (by Stendahl, Balzac, Flaubert and Zola), and the finest short stories (by Merimee, Balzac, Flaubert and Maupassant), this course will seek to discover why fiction grew to be the dominant literary form of the nineteenth century in France and why realism was the aesthetic ideal of the age. All readings in French. Conducted in French.
French 109b. Contemporary French Civilization	This course is designed for those who seek to acquire a working knowledge of the social, cultural, economic and political context of contemporary France, while seeking, at the same time, to develop fluency in French. It is also of interest to students contemplating study abroad, as well as careers in international business, government and law. The course centers around thematic dossiers composed of recent essays and press articles, slides, films and recordings. Ms. Marx-Scouras	French 140b. Twentieth Century French Drama	<input type="checkbox"/> Not offered 1986-1987
French 110a. Introduction to French Literature	Readings in masterpieces of French literature, including works by Montaigne, Molière, Diderot, Voltaire, Baudelaire, Flaubert, Sartre. This course is designed to prepare students to read and interpret French literature in a variety of styles and genres. All reading, writing, lectures and discussions in French. Ms. Harth		

French 142b. The Powers of Language: French Writing Outside of France	<input type="checkbox"/> Not offered 1986-1987 Fiction, poetry, essays written in French by non-French authors. We shall read representative works from Canada, the Caribbean (Haiti, Martinique, Guadeloupe), North Africa (Morocco, Algeria), and Africa (Senegal). Themes include linguistic power, colonialism and alienation, nationalism, negritude, writing in the feminine, conflict of generations, crisis of contemporary civilization. Authors include: Fanon, Memmi, Schwarz-Bart, Césaire, Yacine, Chraïbi, Djebar, Kane, Ousmane. Films and guest lecturers.	French 185a. Symbolism and Myth in Nineteenth Century France	<input type="checkbox"/> Not offered 1986-1987
French 144a. Power and Culture in the Ancien Régime	<input type="checkbox"/> Not offered 1986-1987	French 190a. Major Authors Seminar	<input type="checkbox"/> Not offered 1986-1987
French 149a. Twentieth Century French Fiction	<input type="checkbox"/> Not offered 1986-1987 A study of the theory and practice of French novelists in the twentieth century. Authors to be considered include: Gide, Sartre, Céline, Beckett, Robbe-Grillet, Gracq, Tournier, Duras. Particular attention will be paid to the notion of authorial presence in the novel.	German	
French 155a. Literature and Ideology	<input type="checkbox"/> Not offered 1986-1987	German 102aR. German Literature before 1700	Lectures and readings in German. Though the emphasis will be on Minnesang, the Middle High German epics, and Baroque literature, there will be some attention to the Gothic and Old High German periods as well as to the literature of the Reformation. Ms. Frisch
French 165a. Twentieth Century French Literature and Film	We will study the stylistic, thematic, and narrative relationships between selected contemporary French literary texts and their cinematic counterparts, made either by the same author or by independent film makers. Our aim is to achieve a greater understanding of the strengths, weaknesses, and limitations of both media. Among the artists to be considered are: Cocteau, Pagnol, Sartre, Prévert, Louys, Bunuel, Robbe-Grillet, Beckett, Duras. Ms. Hale	German 103a. Conversation, Composition, and Advanced Reading in German	<input type="checkbox"/> Not offered 1986-1987
French 170b. French Culture from the Renaissance to the Romantic Period	In this course, we shall illuminate the relationship between the moralist tradition in France, (Montaigne, La Rochefoucauld, Diderot, Balzac) and the daily lives of their times. We shall locate the writers in their periods, place them geographically, outline their cultural and social frameworks, try to understand their collective mentality, their views of life and death, passion and reason, pleasure and pain. Mr. Gendzier	German 106aR. Advanced Composition and Style	<input type="checkbox"/> Not offered 1986-1987
French 178a. Fact and Fiction in France: The Uses of the Past	<input type="checkbox"/> Not offered 1986-1987	German 110a. Introduction to the Life and Works of Goethe	Intensive study of many of Goethe's dramatic, lyric and prose works, including <i>Cotz</i> , <i>Werther</i> , <i>Faust I</i> and a comprehensive selection of poetry; lectures and readings in German. Mr. Zohn
		German 120a. Enlightenment, Storm and Stress, Idealism; Lessing, Lenz, and Schiller	<input type="checkbox"/> Not offered 1986-1987
		German 130b. German Romanticism	<input type="checkbox"/> Not offered 1986-1987 The course studies literary and theoretical works of the Romantic movement and examines concurrent attitudes toward the German past, religion, philosophy, art, music and science. Lectures and readings in German.
		German 140a. German Literature in the Nineteenth Century	<input type="checkbox"/> Not offered 1986-1987 A study of German, Austrian and Swiss prose, poetry and drama from Heine to Hauptmann, including the major figures of "Young Germany," Poetic Realism and Realism (Büchner, Drosé-Hüllshoff, Möike, Grillparser, Gotthelf, Hebbel, Stifter, Nestroy, Keller, Raabe, Fontane, etc.). Lectures and readings in German.

German 150aR. The Jewish Contribution to German Literature	<p>□ Not offered 1986-1987</p> <p>This course will examine the literary harvest of the German-Jewish symbiosis from the Minnesinger Süsskind von Trimberg to Nelly Sachs, the poetess of the Holocaust, concerning itself with those Jewish writers in or from Germany (Heine, Wasserman, Lasker-Schüler), Austria (Beer-Hoffman, Schnitzler, S. Zweig), and Czechoslovakia (Kafka, Brod, Werfel) whose writings reflect Jewish themes or were shaped by the creative tension between the writers' Jewishness and the culture of German-speaking countries.</p> <p>Lectures and readings in English. Students with advanced preparation will be expected to do the reading in German.</p>	Italian 110bR. Modern Italian Literature	<p>Analysis of major works by Verga, Pirandello, Svevo, Moravia, Lampedusa, Pavese, and Vittorini with respect to the political, economic and social problems of post-Risorgimento Italy. Lectures, discussion, readings and written work in Italian.</p> <p>Mr. Lansing</p>
German 160bR. German Drama and Lyric Poetry from Naturalism to the Second World War	<p>A survey of major trends in these genres with an emphasis on close analysis of selected works by such writers as Hauptmann, Hofmannsthal, Schnitzler, Kaiser, Brecht, Rilke and George.</p> <p>Mr. Frey</p>	Italian 140a. Dante's Divine Comedy	<p>□ Not offered 1986-1987</p> <p>A close study of the entire poem —<i>Inferno</i>, <i>Purgatorio</i>, <i>Paradise</i> — as a symbolic vision of reality reflecting the culture and thought — political, philosophical, theological — of the Middle Ages. Readings will include two minor works, the <i>Vita Nuova</i> and <i>On Monarchy</i>. No knowledge of Italian is required.</p>
German 170b. Starting from Zero: German Literature Since World War II	<p>□ Not offered 1986-1987</p> <p>We will trace the efforts of a new generation of German writers in both West and East Germany to come to terms with the horrors of war and totalitarianism and with the materialism of the post-war "economic miracle." Literary investigations will focus on major writers and poets such as Grass, Johnson, Lenz, Wolf, Böll, Celan, Sachs, Bachmann, Dürrenmatt, Frisch, Weiss and Handke. Class discussions will be in English. Reading available in German and in English translation. Viewing of recent German films will supplement material.</p>	Russian	
German 180a. Twentieth Century Prose: Mann, Kafka, Hesse	<p>□ Not offered 1986-1987</p>	Russian 106b. Advanced Composition, Conversation and Reading	<p>□ Not offered 1986-1987</p> <p>Conducted entirely in Russian.</p> <p>Prerequisite: Russian 3a or equivalent.</p>
German 190b. Vienna at the Turn of the Century	<p>The literary and cultural scene in imperial Vienna during the final decades of Franz Joseph's reign will be explored through the works of such writers as Schnitzler von Hofmannsthal, Zweig, Altenberg, Herzi and Kraus. Attention will be paid to the relationship between men of letters and innovative thinkers, artists and musicians like Freud, Wittgenstein, Klimt, Loos; Schiele, Mahler and Schoenberg.</p> <p>Mr. Zohn</p>	Russian 110a. Advanced Readings in Russian	<p>□ Not offered 1986-1987</p>
German 195b. The Culture of the Weimar Republic	<p>□ Not offered 1986-1987</p>	Russian 112b. Theory of Language Proto-Slavic	<p>□ Not offered 1986-1987</p>
Italian		Russian 117a. Pre-Nineteenth Century Russian Literature	<p>□ Not offered 1986-1987</p>
Italian 105a. Contemporary Italian Culture	<p>□ Not offered 1986-1987</p>	Russian 130a. Nineteenth Century Russian Literature	<p>A comprehensive survey of the major writers and themes of the nineteenth century, including Gogol, Turgenev, Dostoevsky, Tolstoy, Chekhov and others. Conducted in English. Readings available in Russian and in English translation.</p> <p>Ms. Miller</p>
		Russian 134bR. Stories and Plays of Chekhov	<p>A detailed chronological investigation of the evolution of Chekhov's art—a blend of realism and symbolism. Emphasis on the major themes, method of characterization and literary style of the stories; his innovative techniques in drama; certain thematic parallels between the late stories and the plays. Conducted in English with readings available in Russian for concentrators and in English translation.</p> <p>Ms. Miller</p>

Russian 146a. Dostoevsky	<input type="checkbox"/> Not offered 1986-1987 A comprehensive survey of Dostoevsky's life and works, with special emphasis on his five major novels. Conducted in English. Readings available in Russian for concentrators, and in English translation.	Spanish 150a. Spanish Drama of the Golden Age	<input type="checkbox"/> Not offered 1986-1987 A journey in search of life, liberty and the pursuit of happiness. The transformation and development of modern theatre and characters as seen in representative works of Cervantes, Lope de Vega, Tirso de Molina, Calderón and their contemporaries.
Russian 147b. Tolstoy	This course will study the major novels and short stories of Leo Tolstoy (such as The Cossacks, Family Happiness, War and Peace, Anna Karenina , "The Death of Ivan Ilych," Master and Man," Father Sergius) against the backdrop of nineteenth century history and with reference to twentieth century critical theory. Ms. Miller	Spanish 160a. Studies in Latin American Literature I	Conducted in English with readings in English translation. Staff
Russian 148a. Survey of Russian Theater from 1719 to 1917	<input type="checkbox"/> Not offered 1986-1987	Spanish 161aR. Masters of Modern Latin American Poetry	Development of twentieth century poetics through the works of Dario, Vallejo, Neruda and Paz. Mr. Yglesias
Russian 148b. A Survey of Twentieth Century Russian Theater: Chekhov to the Present	<input type="checkbox"/> Not offered 1986-1987 History and development of Russian drama from Chekhov to the present. Conducted in English. Readings available in Russian and in English translation.	Spanish 180b. Twentieth Century Spanish Literature	A study of major writers, works, styles and movements of the twentieth century, in Spanish. Mr. Larsen
Russian 149b. Twentieth Century Russian Literature, Art and Theater	We will focus on the three decades 1900-1930 and their various artistic movements (Futurism, Constructivism, Imagism, Cubism, Dada, Surrealism) as reflected in literature, painting and theater. We will explore the interrelationships between these artistic movements and the political scene. Readings will illustrate the richness of this modern period of Russian culture. Conducted in English. Readings in English translation. Mr. Szulkin	Spanish 181a. Revolt in Spain: Literature and Painting	<input type="checkbox"/> Not offered 1986-1987
Russian 161b. The Structure of Modern Russian	<input type="checkbox"/> Not offered 1986-1987	Spanish 182bR. The Spanish Civil War: Cultural Cataclysm	We will focus on works illustrating the background of the conflict, its development and far-reaching influence on the fiction, art, film, music, theater, poetry and journalism of later decades. In works by Alaya, Matute, Gironella, Picasso, Hernandez, Hemingway, among others, we will examine such motifs as the accommodations of the arts to various political persuasions, the exile experience, and coming home. Mr. Larsen
Spanish		Spanish 183a. Images of Spain	<input type="checkbox"/> Not offered 1986-1987
Spanish 120a. Cervantes: In Depth Study of Don Quixote	Ms. Collard	Spanish 185b. Realism in Modern Spain	<input type="checkbox"/> Not offered 1986-1987 A study of various realistic techniques in nineteenth and twentieth century Spain and their relationship to the realistic tradition in Spanish culture. Movements and styles such as costumbrismo, naturalism, perspectivism, tremendismo, surrealism, as expressed in a number of artistic media. Focus will be on writers and artists such as Caldós, Pardo, Bazán, Blasco Ibáñez, Perez de Ayala, Cela, Lorca, Guillén, Dalí, Picasso, Buñuel.
Spanish 125a. The Seventeenth Century	<input type="checkbox"/> Not offered 1986-1987 The baroque mind: breakdowns and reorganization. Works by seventeenth century Spanish poets and novelists.		
Spanish 130a. Nineteenth Century Spanish Literature	<input type="checkbox"/> Not offered 1986-1987		
Spanish 140a. Masters of Spanish Poetry	<input type="checkbox"/> Not offered 1986-1987		

Mathematics

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from Greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The Department has available a variety of fellowships and scholarships for well-qualified students. To be considered for such financial support the student should submit an application by February 15.

Faculty

Professor
Gerald W. Schwarz.
Chair:
Smooth and Algebraic
Transformation
Groups, especially
Orbit Structure, C^∞
Functions on R^n .

Professor
Maurice Auslander:
Non-commutative
Algebra.
Homological Algebra.

Professor
Edgar H. Brown Jr.:
Algebraic Topology:
Manifolds,
Cobordism, Surgery,
Homotopy Theory.

Professor
David A. Buchsbaum:
Commutative Algebra.
Homological Algebra.

Professor
David Eisenbud:
Commutative Algebra.
Algebraic Geometry.
Knot Theory and
Singularities of
Complex Varieties.

Professor
Harold I. Levine:
Differential Topology.
Singularities of
Differential Maps.

Professor
Jerome P. Levine.
Graduate Advisor:
Differential Topology.
Knot Theory and
Related Algebra.

Professor
Teruhisa Matsusaka:
Algebraic Geometry.
Classification and
Deformations of
Algebraic Varieties.

Professor
Alan L. Mayer:
Classical Algebraic
Geometry and Related
Topics in
Mathematical Physics.

Professor
Paul B. Monsky:
Number Theory.
Arithmetic Algebraic
Geometry.

Professor
Richard S. Palais:
Non-linear Partial
Differential Equations.
Calculus of Variations
in Geometry of
Mathematical Physics.
Transformation
Groups.

Visiting Professor
Corrado DeConcini:
Geometric and
algebraic invariant
theory; determinantal
varieties and algebraic
topology.

Visiting Professor
**Pierre van
Moerbeke:**
Stochastic Processes.
Korteweg-de Vries
Equation. Toda
Lattices.

Visiting Professor
Shi-Shyr Roan:
Complex algebraic
geometry and complex
manifolds.

Associate Professor
Mark Adler:
Analysis: Differential
equations, completely
integrable systems.

Associate Professor
Ira Gessel:
Theoretical Computer
Science, enumerative
combinations.

Associate Professor
Michael Harris:
Arithmetic of Abelian
Varieties Over
Number Fields. Class
Field Theory. P-adic
Representation
Theory. L-Functions.

Associate Professor
Kiyoshi Igusa:
Algebraic K-Theory.

Assistant Professor
Ivan Mirkovic:
Representation of lie
groups with a strong
emphasis in algebraic
number theory and
algebraic geometry.

Assistant Professor
Thomas Parker:
Differential Geometry
and the Geometry of
Mathematical Physics.

Assistant Professor
Troels Petersen:
Integrable
Hamiltonian systems:
algebraic groups;
representation theory
and abelian varieties.

Assistant Professor
Daniel Ruberman:
Geometric topology:
knots and low
dimensional
manifolds.

Assistant Professor
Takahiro Shiota:
Analysis:
Partial differential
equations.

Visiting Assistant
Professor
Andrei Iacobi:
Symplectic geometry
and mechanics.

Lecturer
Jee Koh:
Commutative algebra
and algebraic
geometry.

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance in the basic courses in algebra, analysis, topology and geometric analysis — or equivalent examinations (see Program of Study).
4. Proficiency in reading French, German, or Russian.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the basic courses in algebra, analysis, topology and geometric analysis — or equivalent examinations (see Program of Study).
4. Participation in the Second-Year Seminar.
5. Superior performance in the Qualifying Examination.
6. Proficiency in reading two of French, German or Russian.
7. Doctoral dissertation approved by the Department.
8. Successful defense of the dissertation.

Program of Study.

The normal first year of study consists of Mathematics 101a and b, 111a and b, and 121a and b. In exceptional circumstances and only with the permission of the graduate adviser, a student with superior preparation may omit one or more of these courses and elect higher level courses instead. In this case he or she must take an examination in the equivalent material during the first year. The second year's work will normally consist of

Qualifying Examination.

Mathematics 110a and higher level courses in addition to preparation for the qualifying examinations described below and participation in the second-year seminar. Upon completion of the qualifying examinations, the student will choose a dissertation adviser and begin work on a thesis. This should be accompanied by advanced courses and seminars.

The Qualifying Examination consists of two parts: a major examination and a minor examination. Both are normally taken in the latter part of the second year but may occasionally be postponed until early in the third year. For the major examination the student will choose a limited area of mathematics, e.g., differential topology, or several complex variables, or ring theory — and a major examiner from among the faculty. Together they will plan a program of study and a subsequent examination in that material. The aim of this study is to prepare the student for research toward the Ph.D. The minor examination will be more limited in scope and less advanced in content. The procedures are similar to those for the major examination, but its subject matter should be significantly different.

Admission to Candidacy.

To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have successfully completed the qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

Dissertation and Defense.

The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

Mathematics 101a and b. Algebra I

Groups, rings, modules. Galois theory, affine rings and rings of algebraic numbers. Multilinear algebra. The Wedderburn Theorem. Other topics as time permits.

Fall Term: Mr. Buchsbaum
Spring Term: Mr. Shiota

Mathematics 110a. Geometric Analysis

Manifolds, tensor bundles, vector fields and differential forms. Frobenius theorem. Integration, Stoke's theorem, and deRham's theorem.

Mr. Palais

Mathematics 110b. Geometric Analysis

The correspondence between Lie groups and Lie algebras. Exponential map, homomorphisms, Lie sub groups, and homogeneous spaces. Representations of compact Lie groups.

Mr. Palais

Mathematics 111a. Real Analysis

Measure and integration. LP spaces, Banach spaces, Hilbert spaces. Radon Nikodym, Riesz representation, and Fubini theorems. Fourier transforms.

Mr. Mayer

Mathematics 111b. Complex Analysis

The Cauchy integral theorem, calculus of residues, and maximum modulus principle. Harmonic functions. The Riemann mapping theorem and conformal mappings. Other topics as time permits.

Mr. Mayer

Mathematics 121a and b. Topology I

Point set topology, fundamental group, covering spaces. Simplicial complexes, elementary homology and cohomology theory with applications. Manifolds and orientation, cup and cap products, Poincare duality. Other topics as time permits.

Fall Term: Mr. Ruberman
Spring Term: Mr. Igusa

Mathematics 200aR. Second Year Seminar

Mr. Parker

Mathematics 201a. Introduction Modular to Representation Theory of Finite Groups

Some topics to be covered:
a) Vertices, sources and Green correspondence.
b) Almost split sequences and applications.
c) Group cohomology including complexity and varieties.

Mr. Auslander

Mathematics 201b. Topics in Representation Theory	Some of the topics will be related to the contents of 201a, isolated surface singularities. Prospective students are advised to take this course if possible. Staff	Mathematics 297. Number Theory Seminar	Research seminar; not normally taken for credit. Staff
Mathematics 202a and b. Algebraic Geometry I	Staff	Mathematics 299a and b. Readings in Mathematics	Staff
Mathematics 203a. Algebraic Number Theory I	Mr. Monsky	Mathematics 302a. Algebraic Geometry	Staff
Mathematics 203b. Topics in Algebraic Number Theory	Mr. Harris	Mathematics 302b. Topics in Algebraic Geometry	□ Not offered 1986-1987 Moduli spaces of curves. An introduction to their construction and to the geometry of M_g and $M_{g,1}$ for g .
Mathematics 211a. Analysis II	An examination of the heat kernel in Riemannian geometry and its geometric content. The descriptions of the heat kernel in terms of differential geometry and global analysis will be related to the descriptions obtained by physicists in quantum field theory. Mr. Parker	Mathematics 311a and b. Analysis III	Advanced topics in analysis. Staff
Mathematics 211b. Analysis II	Staff	Mathematics 321a and b. Topology III	Fall Term: Mr. J. Levine Spring Term: Mr. Ruberman
Mathematics 221a. Topology II	Elementary homotopy theory, fibrations, obstruction theory, and spectral sequences. Mr. Igusa	Mathematics 322a. Geometric Topology	Staff
Mathematics 221b. Topology II	Cohomology operations, characteristic classes, classifying spaces, elementary cobordism. Staff	Mathematics 324aR. Lie Groups	□ Not offered 1986-1987
Mathematics 291. Fellowship of the Ring — Seminar in Commutative Algebra	Research seminar; not normally taken for credit. Staff	Mathematics 326a and b. Topics in Algebraic Geometry and Commutative Algebra	Mr. Schwarz
Mathematics 293. Topology Seminar	Research seminar; not normally taken for credit. Staff	Mathematics 335a. Topics in Lie Algebras	Staff
Mathematics 295. Algebraic Geometry Seminar	Research seminar; not normally taken for credit. Staff	Mathematics 399a and b. Readings in Mathematics	Staff
Mathematics 296. Seminar in Artin Rings and Representation Theory	Research seminar; not normally taken for credit. Staff	All graduate courses will have organizational meetings the first week of classes.	
		Mathematics +01-+16. Research	Independent research for the Ph.D. degree. +01. Mr. Auslander +02. Mr. Brown +03. Mr. Buchsbaum +04. Mr. H. Levine +05. Mr. J. Levine +06. Mr. Matsusaka +07. Mr. Monsky +08. Mr. Palais +09. Mr. Schwarz +10. Mr. Eisenbud +11. Mr. Mayer +12. Mr. Van Moerbeke +13. Mr. Igusa +14. Mr. Adler +15. Mr. Harris +16. Mr. Gessel

Music

Objectives

The graduate program in music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

The following general fields of study are offered in music:

1. **Composition.** This program, emphasizing composition and supported by studies in analysis, leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

2. **Musicology.** In this program students may elect to emphasize or concentrate in one of two different programs of study, music history or theory and analysis. In the music history program, a variety of techniques and methodologies, including source studies, style development and historiography are applied to different repertoires and historical problems. The program in theory and analysis features works in the history of theory from the medieval period to the present, as well as analytic work in the context of theory construction and the evaluation of tonal as well as contemporary analytic models. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas, but composers are expected to undertake some work in music history and historians to acquire some competence in tonal writing.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in musical composition and theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in musicology should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. Musicology applicants wishing to specialize in theory and analysis should also submit examples of advanced work in musical theory. This work should be submitted together with the formal application for admission.

All applicants are expected to have some proficiency at the piano or an orchestral instrument. Information about this should be furnished when making formal application. A departmental written test in basic musicianship and analysis will be sent to all applicants; answers are to be submitted by mail on or before February 15.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department on or before the final date specified in the Academic Calendar for filing "Application for Financial Aid." Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Associate Professor
James D. Oleson,
Acting Chair,
Fall Term

Professor
Robert L. Marshall,
Chair

Professor
Martin Boykan

Professor
Allan R. Keiler

Professor
Harold S. Shapero,
Director of Electronic
Studios

Professor
Caldwell Titcomb

Associate Professor
Jessie Ann Owens

Assistant Professor
Allen L. Anderson

Assistant Professor
Eric Chafe

Assistant Professor
Edward C. Nowacki,
Theory Coordinator

Lecturer with Rank of
Assistant Professor
David Hoose

Performing Artists in
Residence
Sarah Mead
Lawrence Siegel

Lydian String Quartet
Judith Eissenberg
Mary Ruth Ray
Rhonda Rider
Wilma Smith

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the music faculty).

Candidates for the master's degree in Musical Composition and Theory must possess a reading knowledge of one language from Group A.

Candidates for the master's degree in History of Music must possess a reading knowledge of two languages from Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

Instrumental Proficiency.

At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements.

Twelve semester courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than two semester courses taken at another institution.

In general, the program of course work is completed in two academic years. It is suggested that students pursue no more than three full courses in any one year.

For candidates in musicology.

The musicology program consists of three categories of courses: (1) proseminars in music history, (2) seminars in music history, (3) seminars in history of theory. Within each category courses are offered in the six principal historical periods of western music from the middle ages to the twentieth century (medieval, Renaissance, baroque, classical, romantic, modern). The proseminars survey an array of topics illustrating the representative avenues of research and methodological approaches. Seminars typically concentrate on a single topic. Courses in analysis similarly belong to three categories: (1) proseminars and seminars in tonal analysis, (2) proseminars and seminars in non-tonal analysis, (3) advanced

For candidates in composition.

Examinations.

analysis. Musicology students are required to take (1) at least one course in each of five historical periods, in any combination of proseminars or seminars; (2) at least two semesters of analysis; (3) the proseminar in composition or its equivalent.

Composition students are required to take (1) proseminars and seminars in composition, (2) proseminars and seminars in tonal and non-tonal analysis, (3) a proseminar in music history or its equivalent.

Shortly after their arrival, new graduate students will be expected to take an examination in the standard literature of music. Where deficiency occurs, examinations will be repeated.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must demonstrate their competence by means of a written general examination.

The following timetable is suggested for major general examinations: **For candidates in composition**, the composition examination may be taken during the first year and repeated if necessary in the second; the analysis portion of the examination will normally be taken during the second year. Examinations may be repeated in the third year only in the case of a student not proceeding beyond the master's degree. **For candidates in musicology**, major general examinations will normally be taken during the second year; they may be repeated in the third year at the discretion of the faculty.

Thesis.

Candidates for the degree of Master of Fine Arts in Music are required to submit a thesis. **For candidates in musical composition**, this will consist of a musical composition, its scope to be approved by the music faculty. **For candidates in musicology**, it will be an analytical or historical study on a topic acceptable to the music faculty. Candidates in the history of music may submit, in lieu of a separate thesis, revised copies of two seminar papers that have been certified by the seminar instructor and at least one other faculty member as demonstrating a high degree of competence in research and writing. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or March 1 for a May degree.

Doctor of Philosophy	Admission to the doctoral program is normally granted at the end of the second year of residence and is determined by the student's performance in course work and general examinations. For candidates in music history, acceptance may be deferred pending repetition of portions of the major examinations.	candidates in composition and theory, a semester of Music 200 or 299 is suggested; for candidates in history, an additional semester of Music 227.
Residence Requirements.	A minimum of sixteen semester courses at the graduate level, completed with distinction, are required of all candidates. In general, the program of course work will be completed in three academic years. Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted. Candidates for the doctoral degree in musicology will normally take, in addition to two one-semester courses (proseminar or seminar) beyond those taken for the master's degree, two semesters of dissertation research (Music 401-411). Candidates for the doctoral degree in composition will normally take, in addition to courses taken for the master's degree, two semesters of the seminar in composition and two seminars in advanced analysis.	After meeting their language, residence, and general examination requirements, candidates for the Ph.D. must pass a special oral qualifying examination. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.
Language Requirements.	Candidates for the doctoral degree in the history of music must possess a reading knowledge of all three languages in Group A. If appropriate to the student's program, the music faculty may accept a language in Group B in lieu of Italian. Candidates in composition and theory must possess a reading knowledge of one language of their choice from either group.	Candidates for the degree of Doctor of Philosophy in Composition must submit an original musical composition and a thesis on a theoretical or analytical subject. Candidates for the degree of Doctor of Philosophy in Musicology must submit a dissertation on a historical or analytical subject. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed three hundred fifty words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and March 1 for a May degree of the academic year in which the Ph.D. degree is to be conferred.
Instrumental Proficiency.	At least moderate proficiency at the piano is required of all candidates.	Written dissertations should demonstrate the competence of the candidate as an independent investigator, his or her critical ability, and effectiveness of expression. Upon completion of the dissertation, the candidate will be expected to defend it in an oral examination.
Examinations.	Candidates for the Ph.D. degree have no additional written examination requirements in their major field beyond those for the M.F.A. In the minor field, doctoral-level examinations may, if desired, be replaced by the option of an additional semester of course work completed with distinction. For	

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.		Music 182a. Topics before 1750	<input type="checkbox"/> Not offered 1986-1987
Music 168a. Orchestration	The instruments of the orchestra: their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score. Written exercises, analysis of scores, study of recorded performances, and a live demonstration.	Music 184a. Topics After 1750	<input type="checkbox"/> Not offered 1986-1987
		Music 185aR. Twentieth Century	<input type="checkbox"/> Not offered 1986-1987
	Staff	Music 195aR. Electronic Music	Composition and recording of electronic music. Technical electronics as they apply to musical problems.
Music 180bR. Ethnomusicology	<input type="checkbox"/> Not offered 1986-1987		Mr. Shapero

Music 197a. Tutorial in the Analysis of Tonal Music	<input type="checkbox"/> Not offered 1986-1987	Music 211. Seminar in Renaissance Musical Sources	<input type="checkbox"/> Not offered 1986-1987
Music 197bR. Tutorial in the Analysis of Twentieth Century Music	Basic analytical problems of the music of the twentieth century approached through detailed study of a few representative works. Mr. Anderson	Music 212a. Seminar: Theory of Modality and Tonality	<input type="checkbox"/> Not offered 1986-1987 An investigation of various concepts related to tonal organization (such as mode, key, system, solmization) based on a close reading of theoretical treatises from the fifteenth through the seventeenth centuries.
Music Colloquium	Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. <i>Non-credit.</i> Staff and Visiting Lecturers	Music 213b. Seminar in Music of the Renaissance	Ms. Owens
Music 200b. Proseminar in Medieval Music	<input type="checkbox"/> Not offered 1986-1987 Broad coverage of the principal topics and research techniques of medieval music; structure of the liturgy, chant notation, oral transmission theory, tropes and sequences, polyphonic notation, rhythmic modes. Introduction to standard bibliographic tools including editions, facsimiles, microfilms, liturgical books and reference books.	Music 214b. Seminar: Baroque Topics	<input type="checkbox"/> Not offered 1986-1987 An in-depth investigation of one selected topic in baroque music. Typical topics include the Monteverdi madrigals, seventeenth century instrumental music, the Bach Passions. The methodology employed will vary according to the subject; emphasis will be given to more recent research in most cases.
Music 201a. Proseminar in Music of the Renaissance	Ms. Owens	Music 215b. Seminar: The Bach Sources	Mr. Marshall
Music 202. Proseminar in Music of the Baroque	<input type="checkbox"/> Not offered 1986-1987	Music 216. Seminar: The Origins of the "Classical Style"	<input type="checkbox"/> Not offered 1986-1987
Music 203. Advanced Musical Analysis	<input type="checkbox"/> Not offered 1986-1987	Music 217a. Seminar: Recent Developments in Mozart Research	<input type="checkbox"/> Not offered 1986-1987 The purpose of the course will be to assess the current state of the several areas of Mozart research; biography, source studies, work analysis, performance practice, and the composer's music-historical position in the development of the "classical style."
Music 204. Proseminar in Music of the Eighteenth Century	<input type="checkbox"/> Not offered 1986-1987 In addition to tracing the evolution of the principal genres (e.g., sonata, symphony, string quartet, opera buffa, opera seria), the course will assess the historical position of the major figures from Bach to Handel to Mozart and Haydn. Particular emphasis will be placed on understanding the phenomenon of the "style shift" from baroque to classical style.	Music 218b. Seminar in the Music of the Nineteenth Century	Mr. Keiler
Music 205a. Proseminar in Music of the Nineteenth Century	<input type="checkbox"/> Not offered 1986-1987 A broad study of the principal stylistic developments and musical genres of the nineteenth century; topics discussed would be, e.g., the significance of Beethoven on the musical thinking of the nineteenth century, the rise of national schools of composition, especially opera, program music and its aesthetic and compositional bases.	Music 219a. Seminar: Wagner and Die Meistersinger	Mr. Chafe
Music 210a. Seminar in Music of the Middle Ages	Mr. Nowacki	Music 220. Seminar: The German Post-Romantic Lied	<input type="checkbox"/> Not offered 1986-1987
		Music 224. Seminar in Medieval Music Theory	<input type="checkbox"/> Not offered 1986-1987
		Music 225. Seminar in Baroque Theory	<input type="checkbox"/> Not offered 1986-1987

Music 226a.
History and Literature of Western Music Theory: Baroque to 1850

□ Not offered 1986-1987

Music 226bR.
History and Literature of Western Music Theory: 1850 to the Present

Mr. Keiler

Music 227a.
Proseminar in Theory and Composition

Technical projects in theory and composition; tonal forms and contrapuntal techniques.

Mr. Shapero

Music 227b.
Proseminar in Theory and Composition

Mr. Anderson

Music 228aR.
Seminar in Twentieth Century Techniques

Staff

Music 233a.
Topics in Analysis

Mr. Boykan

Music 233b.
Topics in Analysis

Mr. Boykan

Music 244b.
Berlioz

□ Not offered 1986-1987

Music 246a.
Stravinsky

□ Not offered 1986-1987

Music 270a and b.
Seminar in Serial Music

□ Not offered 1986-1987

Music 292a.
Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided.

Section 1: Mr. Boykan
Section 2: Mr. Shapero

Music 292b.
Seminar in Composition

Section 1: Mr. Boykan
Section 2: Mr. Shapero

Music 299a and b.
Individual Research and Advanced Work

Staff

Music 401-411.
Dissertation Research

Required of all doctoral candidates.

401. Mr. Boykan	407. Mr. Keiler
402. Mr. Marshall	408. Mr. Chafe
403. Mr. Shapero	409. Mr. Pope
405. Mr. Titcomb	410. Mr. Nowacki
406. Ms. Owens	411. Mr. Anderson

Electronic Music Studios

Two studios with facilities for the composition of electronic music are available to qualified student composers.

Director: Mr. Shapero

The Philip W. Lown School of Near Eastern and Judaic Studies

The Lown School is the center for all programs of teaching and research in the areas of Judaic Studies, Ancient Near Eastern studies and Islamic and Modern Middle Eastern Studies. The school includes the Department of Near Eastern and Judaic Studies, the Hornstein Program for Jewish Communal Service and the Center for Modern Jewish Studies. The Department of Near Eastern and Judaic Studies offers academic programs in the major areas of its concern. The

Hornstein Program is a professional training program leading to the Master of Arts degree in Jewish Communal Service. It makes full use of academic resources of the Department of Near Eastern and Judaic Studies and other departments in the university.

The Center for Modern Jewish Studies conducts, and serves to stimulate, research and teaching in Contemporary Jewish Studies, primarily in the field of American Jewish Studies.

Near Eastern and Judaic Studies

Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of classical and modern Judaic civilization, and to advance scholarly research in these areas. This work is done mainly through study of the relevant languages and literatures and the interpretation of primary sources.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

Faculty

Professor
Maryin Fox,
Chair and Director of
the Lown School;
Jewish philosophy.
Rabbinic thought.
Modern Jewish
thought.

Professor
Michael Fishbane:
Biblical studies. Dead
Sea Scrolls.

Professor
Alfred L. Ivry,
Director of Graduate
Studies;
Jewish philosophy.
Islamic philosophy.

Professor
Leon A. Jick:
Contemporary Jewish
history.

Professor
**Benjamin C. I.
Ravid**:
Jewish history.

Professor
Jehuda Reinharz:
Modern Jewish
history. History of
Zionism.

Professor
Bernard Reisman:
Jewish communal
service.

Professor
Marshall Sklare:
Sociology of the
Jewish community.

Professor
Dwight W. Young:
Ancient Near East
civilization.
Assyriology. Ugaritic.
Biblical studies.

Associate Professor
Tzvi Abusch:
Assyriology. Religions
and cultures of the
Ancient Near East.

Associate Professor
Reuven Kimelman:
Talmud and Rabbinic
literature.

Associate Professor
Avigdor Levy,
Director of Islamic
and Middle Eastern
Studies; Middle
Eastern studies.

Visiting Associate
Professor
Gila Ramras-Rauch:
Hebrew literature.

Associate Professor
Gary Tobin,
Director of the Center
for Modern Jewish
Studies; Jewish
community research
and planning.

Visiting Assistant
Professor
David Fishman:
East European Jewish
history and culture.

Assistant Professor
Aaron Katchen:
Second
Commonwealth and
Hellenistic Judaism.
Early modern Jewish
history.

Instructor
Marc Brettler:
Biblical studies.

Lecturer with rank of
Associate Professor
Thomas Phillipp:
Arabic language and
literature.

Lecturer with rank of
Assistant Professor
Ruth Gollan:
Director,
Hebrew language
program.

Lecturer
Charles Cutter:
Judaic bibliography.

Lecturer
Susan Miller:
Middle Eastern
studies.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Bible and Ancient Near East Studies
Jewish History
Hebrew Literature
Jewish Thought

Jewish Philosophy, Medieval and Modern
Islamic Philosophy
Ottoman History
The Modern Middle East
Contemporary Jewish Studies

The department regularly offers additional courses in related fields.

Degree Requirements

Master of Arts

Residence Requirements.	Two years of full-time residence will be required at the normal course rate of seven courses each academic year.	Language Requirements.	Candidates will be required to establish competence in Hebrew or Arabic as well as in two European languages, normally French and German. Additional languages may be required as necessary for research in each individual candidate's field.
Language Requirements.	Candidates will be required to establish competence in Hebrew or Arabic as well as in one European language, normally either French or German.	Comprehensive Examinations.	All candidates for the Ph.D. degree are required to pass three comprehensive examinations. The first examination in each field will be a written comprehensive qualifying examination covering the field as a whole. The second and third examinations will usually be oral and will cover more specialized subjects within the candidate's field.
Comprehensive Examination.	All candidates for the Master of Arts degree are required to pass a comprehensive examination.	Admission to Candidacy.	A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree upon fulfilling the residence requirements, passing the comprehensive examinations, satisfying the language requirements, and having a dissertation proposal approved by the department.
Thesis.	In the field of the Modern Middle East, students may be required to write a thesis which must be submitted no later than April 1 of the year in which the degree is to be conferred. A thesis is not required in other fields in the Department of Near Eastern and Judaic Studies.	Dissertation and Defense.	The dissertation must demonstrate the candidate's thorough knowledge of the field and competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman no later than April 1 of the year in which the candidate expects to earn the degree. The student must successfully defend the dissertation at a final oral examination.

Doctor of Philosophy

Residence Requirements.	Three years of full-time residence will be required at the normal rate of seven semester-courses each academic year. Students who enter with graduate credit from other recognized institutions may apply for transfer credit. By rule of the Graduate School, a maximum of one year of credit may be accepted toward the residence requirement on the recommendation of the chairman of the department.		
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Courses of Instruction

NEJS 101a and b. Introductory Literary Arabic	A first course in literary Arabic covering the essentials of grammar, reading, pronunciation, translation and composition. Mr. Philipp	NEJS 103b Advanced Literary Arabic	A continuation of NEJS 103a. Mr. Levy
NEJS 102a. Intermediate Literary Arabic	Study of advanced grammatical and syntactical forms. Reading in classical and modern texts. Drills in pronunciation and composition. Prerequisite: NEJS 101 or its equivalent. Mr. Philipp	NEJS 104a. Islam: Civilization and Institutions	Consideration of major issues in Islamic history. Examinations of the principle of Islamic theology and law; philosophy and political theory; social and political institutions. Appreciation of Islamic civilization and culture; relations with other cultures. Islam in modern times. Mr. Levy
NEJS 102b. Intermediate Literary Arabic	A continuation of NEJS 102a. Mr. Philipp	NEJS 104bR. Arabic Dialectology	□ Not offered 1986-1987 A grammatical study of one of the ancient dialects accompanied by the reading of texts. The dialect treated will vary from year to year, and the course may be repeated for credit.
NEJS 103a. Advanced Literary Arabic	This course is designed to help the student attain an advanced reading proficiency. The syllabus includes selections from classical and modern texts representing a variety of styles and genres. Mr. Levy	NEJS 106. Elementary Ugaritic	□ Not offered 1986-1987 Grammar and poetic texts will be read with constant reference to biblical literature.

NEJS 107b. Temple, Myth and Ritual in Ancient Mesopotamia	This course will introduce the students to the great literary genres of Mesopotamian civilization. Texts will be studied in translation and examined from literary and cultural points of view. Selections from such groups as epics, wisdom, historical prose, religious and love poetry. Mr. Abusch	NEJS 114a. The Book of Amos	<input type="checkbox"/> Not offered 1986-1987
NEJS 108a. Introduction to Akkadian	Introduction to Akkadian grammar and lexicon and to Cuneiform script. This course is for beginning students of Akkadian. No prerequisites. Mr. Abusch	NEJS 114b. Introduction to Sumerian: Historical Inscriptions	<input type="checkbox"/> Not offered 1986-1987
NEJS 108b. Comparative Grammar of Semitic Languages	An introduction to the internal relationships within the Semitic family and the distinctive linguistic features of its components. Grammatical and lexical similarities to Egyptian and other related languages of North Africa will be studied. Both the earliest documented ancient languages and contemporary spoken dialects will be considered. Mr. Young	NEJS 115a. Book of Deuteronomy	<input type="checkbox"/> Not offered 1986-1987
NEJS 109aR. Genesis in Light of Archaeology	<input type="checkbox"/> Not offered 1986-1987 The book of Genesis will be considered as a whole and selections will be analyzed in depth against the historical background that gave rise to the traditions. The creation of man, calculation of life spans, the deluge and Noah's ark, the patriarchal homeland, the promised land and its holy sites, the Egyptian link and the Damascus connection will be discussed.	NEJS 116b. The Problem of Evil in Jewish Philosophy	<input type="checkbox"/> Not offered 1986-1987
NEJS 110b. Medieval Philosophy	<input type="checkbox"/> Not offered 1986-1987	NEJS 117aR. Job and the Problem of Evil	<input type="checkbox"/> Not offered 1986-1987 A close study of the Book of Job within the context of biblical explanations of evil and suffering, and within the wider framework of the history of religion. Texts from the Jewish tradition, from Indian thought (The Bhagavad Gita) and from modern literature (including Kosinski's The Painted Bird and Kafka's The Trial) will also be read and discussed. All texts will be in English.
NEJS 111a. Introduction to Biblical Literature	A survey of the Hebrew Bible and its main themes. Biblical books will be examined from the archaeological, literary and traditional perspectives, and will be compared with other ancient Near Eastern compositions. The question of whether there is one correct method of interpreting biblical texts will be explored. No knowledge of Hebrew is presumed. Mr. Brettler	NEJS 117bR. Dead Sea Scrolls	<input type="checkbox"/> Not offered 1986-1987 Studies in the exegetical literatures of Qumran with particular attention to a detailed examination of the so-called Peshier literature. Emphasis will be placed on interpretative techniques and a consideration of the historical background of the texts where pertinent.
NEJS 111b. Genesis	<input type="checkbox"/> Not offered 1986-1987	NEJS 118bR. Book of Psalms	Selected readings of biblical psalms. Special attention will be paid to religious ideas, literary forms and poetics. Other examples of biblical poetry will be considered as well. Mr. Fishbane
NEJS 112b. The Book of Isaiah	<input type="checkbox"/> Not offered 1986-1987	NEJS 119b. The Minor Prophets	<input type="checkbox"/> Not offered 1986-1987
NEJS 113aR. The Book of Targum	Mr. Fishbane	NEJS 120b. Intermediate Talmud	A more intensive study of selected portions of Treatise Sanhedrin not dealt with in NEJS 53a. Greater emphasis will be placed on the understanding of the classical commentaries. Students will be expected to develop the ability to work through a section of the text on their own. The analysis will deal with the issue of voluntary and compulsory arbitration, and the binding nature of gambling agreements. Prerequisite: Hebrew 13. Mr. Kimelman
NEJS 113b. The Book of Exodus	<input type="checkbox"/> Not offered 1986-1987	NEJS 121b. Aspects of the Apocalyptic Imagination	<input type="checkbox"/> Not offered 1986-1987

NEJS 122b. Story Telling in the Bible	An examination of the narrative techniques of various biblical stories, including selections from Genesis, Judges, Samuel, Jonah and Ruth. Consideration of such topics as perspective, irony, mimesis and repetition of key words. The basic tools for biblical research will also be introduced. Prerequisite: Knowledge of Biblical Hebrew.	NEJS 128a. Jews, Greeks and Romans	Rulers, rabbis and rebels from the Maccabees to Mohammed; Talmudic Judaism and the background of Christianity. We examine the political conflicts and social and religious accommodations between the Jews and their conquerors in late antiquity.
	Mr. Brettler		Mr. Katchen
NEJS 123bR. Classical Biblical Commentaries	□ Not offered 1986-1987 An intensive study of the French and Spanish schools of Jewish commentators on selected books of the Bible.	NEJS 129b. Alexandria: The City and the Idea	□ Not offered 1986-1987 A study of the first cosmopolitan society in Western History: its political and social history, its growth as a cultural center and its function as an arbiter of style and taste in the arts and sciences. The meeting of Greek and Jew, with their diverse cultures, had profound consequences for Western culture, and the extent of their interaction will be examined in detail.
NEJS 124a. Modern Jewish-Christian Religious Thought	□ Not offered 1986-1987	NEJS 130a. Images of Moses Ancient and Modern	Moses, the supreme legislator and prophet of ancient Israel, often came to be viewed in later periods as the symbol of everything Jewish. We will examine a classic group of writings, from Philo and the rabbis to Buber and Freud, not only to see how later generations understood Moses' personality, character and legacy, but, more particularly, as a touchstone of changing attitudes to the Jewish heritage and as a key to the history of intergroup dynamics between Jew and non-Jew.
NEJS 124b. Introduction to Jewish Mysticism	A survey of the field of Jewish mysticism as reflected in its history, its major texts, its original ideas and its symbolic structures. In addition to the standard secondary works, readings will include selections from the primary sources such as the Zohar. While focusing on the history and development of the central themes in Jewish mysticism, the course will also be concerned with how to read a Jewish mystical text. All readings will be in English. There is no language prerequisite.		Mr. Katchen
	Mr. Fishbane	NEJS 130b. The Philosophical and Religious Thought of Maimonides	□ Not offered 1986-1987
NEJS 125bR. Midrashic Literature: Sifre Deuteronomy	□ Not offered 1986-1987 An analysis of the central ideas, the literary structures and the midrashic method of the Sifre Deuteronomy. Emphasis will be placed on a close reading of the text with a view to developing in the students the capacity to do an independent analysis of midrashic literature. Attention will also be given to the general background and development of Midrash.	NEJS 131a. History of Jewish Philosophy: From the Bible to Maimonides	□ Not offered 1986-1987 A survey and analysis of dominant themes in Jewish philosophy as reflected in the Bible, rabbinic literature and such major thinkers as Philo, Solomon ibn Gabirol, Judah Halevi and Maimonides.
NEJS 126b. Agadic Literature: Avot DeRabbi Natan	□ Not offered 1986-1987	NEJS 132bR. The Literary Study of Midrash	An introduction to the ancient rabbinic Bible commentaries known as aggadic midrash. The methods and assumptions of this literature will be explored and related to modern literary theory. Features of midrashic parables and legends will also be considered. Representative texts will be treated from different collections and periods. Text study will follow Hebrew texts with English translations provided.
NEJS 127aR. Greek Jewish Literature	□ Not offered 1986-1987		Mr. Fishbane
NEJS 127b. The Jewish Liturgy	□ Not offered 1986-1987 A study of the literary structure, theological framework and historical development of the Sabbath and daily liturgy. Emphasis will be placed on the interplay of the literary forms and theological ideas in each prayer, and within the flow of the complete service. Concomitantly, works on the problematics of prayer will be studied. Scholars such as Eliezer Berkovitz, Daniel Goldschmidt, Joseph Heinemann, Abraham Heschel, Issachar Jacobson and Trygve Kronholm will be read.	NEJS 135bR. Aristotelian Elements in Islamic and Jewish Philosophy	□ Not offered 1986-1987 Medieval Aristotelianism is faithful to Aristotle, but in its fashion. That fashion is decisive in Islamic and medieval Jewish philosophy. It will be explored by first ascertaining Aristotle's views in the areas of physics, metaphysics and ethics; and then by tracing expressions of these ideas in English translations of writings of Alfarabi, Avicenna, Abraham ibn Daud and Maimonides.

NEJS 137a. Three Major Themes in Modern Hebrew Literature	<input type="checkbox"/> Not offered 1986-1987	NEJS 144a. Jewish Communities in the Muslim Middle East	<input type="checkbox"/> Not offered 1986-1987 A historical survey of Jewish-Muslim attitudes, relations and interactions in the Muslim countries of the Middle East. Among the subjects to be discussed: the legal position of the Jews under Islam; Muslim actual policies and attitudes; Jewish-Muslim cultural interaction; Jewish social organization in Muslim lands.
NEJS 137b. Contemporary Israeli Literature	In the past two centuries, Judaism's spiritual crises have been reflected in secular Hebrew literature. Israeli fiction in turn, reflects many of the problems in contemporary Israeli life: the relation to the Arab, the remaining effects of the Holocaust, the self-definition of the Jew, etc. Works discussed will be those of Moshe Shamir, Aharon Appelfeld, Binyamin Tammuz, Ainos Oz, A.B. Yehoshua and others. Ms. Ramras-Rauch	NEJS 144b. Nationalism in the Middle East	<input type="checkbox"/> Not offered 1986-1987 A historical and comparative analysis of Arab, Turkish and Persian nationalism in the twentieth century. Origins, ideological currents and attitudes toward national, regional and global issues are among the topics to be discussed.
NEJS 139a. Hebrew Literature: Modern Prose	<input type="checkbox"/> Not offered 1986-1987	Nejs 145a. State and Society in the Middle East	The sharp polarities that lie at the heart of Middle Eastern politics are seen in the clashes between authoritarianism vs. democracy, westernization vs. tradition, women's rights vs. male dominance, religious fanaticism vs. tolerance. This course will examine how governments from Morocco to Iran have pursued economic development in environments of scarcity and conflict. Multi-disciplinary readings of a current nature will emphasize the "insider's" point of view. No prerequisites.
NEJS 139b. Modern Hebrew Literature: Poetry	<input type="checkbox"/> Not offered 1986-1987		Ms. Miller
NEJS 140a. The Jews in Europe to 1492	<input type="checkbox"/> Not offered 1986-1987	NEJS 145bR. The Making of the Modern Middle East	<input type="checkbox"/> Not offered 1986-1987 This course will discuss the processes which led to the emergence of the modern Middle East: disintegration of Islamic society in the nineteenth century; European colonialism; reform and reaction; the rise of nationalism and the emergence of the modern states.
NEJS 140b. From Medieval to Modern: The Jews in Europe from 1492 to 1815	<input type="checkbox"/> Not offered 1986-1987	NEJS 146b. Judaism, Christianity and Islam	A comparison of three kindred religions, from antiquity to current times. The tenets of these faiths, their doctrines and rituals will be examined in the perspective of their historic and on-going relationship. Contemporary religious issues affecting all three traditions will be discussed.
NEJS 141bR. Jews, Catholics and Protestants in Western Europe, from the Reformation to the Present	<input type="checkbox"/> Not offered 1986-1987 A study of the political, legal, social and economic status of Catholics, Protestants and Jews in early and modern Europe, with emphasis on the status of minorities and their struggle for equality in the transition from the medieval respublica Christiana to the modern secular nation-state.		Mr. Ivry
NEJS 142a. An Introduction to Post-Biblical Jewish History	<input type="checkbox"/> Not offered 1986-1987 An introduction to the main trends and developments in the legal, economic, social and religious history of the Jews, with emphasis on major areas of Jewish settlement.	NEJS 147a. History of the Middle East and the Ottoman Empire, 1450-1914	<input type="checkbox"/> Not offered 1986-1987 A historical survey of the Near East from the establishment of the Ottoman Empire as the area's predominant power to World War I. Topics include Ottoman institutions, their transformation and impact on Near Eastern society, the Ottoman Empire as a world power; decline and European imperialism; nineteenth century reform and westernization.
NEJS 142bR. Economic History of the Jews	<input type="checkbox"/> Not offered 1986-1987		
NEJS 143b. Hellenistic Philosophies	This course will examine major philosophical movements of the Greco-Roman world of late antiquity. The ideas of Epicureanism, Stoicism, Skepticism and Neoplatonism will be studied, with particular attention to the writings of Philo, Plotinus and the Church Fathers. Mr. Ivry		

NEJS 147b. The Arab-Israeli Conflict	Consideration of Arab-Jewish relations, attitudes and interactions from 1880 to the present. Traces the evolution of the struggle for Palestine into a major regional conflict. Emphasis is on social factors and intellectual currents and their impact on politics. Examines the conflict within its international setting. Mr. Levy	NEJS 157aR. A History of Israel, 1948-Present	An analysis of Israel's domestic and foreign policies from 1948 to the present. Particular attention will be given to social and political trends in Israeli society, issues of war and peace, relations with Arabs and Palestinians and relations with the United States. Mr. Reinharz
NEJS 149b. Islamic Bibliography	<input type="checkbox"/> Not offered 1986-1987 The purpose of this course is to familiarize the student with the history of oral and written communications in Islam and Middle East. Origins and development of printing is discussed. Special emphasis is placed on bibliographic literature in Western languages of Arabic, Turkish and Persian manuscripts and printed works. There are no prerequisites, although a workable knowledge of European languages and languages of the area is desirable.	NEJS 158bR. Biblical Prophecy: Book of Jeremiah	<input type="checkbox"/> Not offered 1986-1987 A study of the Hebrew text of the book of Jeremiah with emphasis on the role of prophecy and the literary forms and theological issues with which the prophet deals.
NEJS 150a. Foundations of Zionist Thought	<input type="checkbox"/> Not offered 1986-1987	NEJS 160a. The Emergence of the American Jewish Pattern, 1654-1967	Survey of American Jewish history from the earliest settlement to the present. The emergence of the institutions, ideologies, life styles and cultural norms which constitute the American Jewish pattern. Mr. Jick
NEJS 152b. A History of Antisemitism	<input type="checkbox"/> Not offered 1986-1987	NEJS 161a. American Jewish Life	A survey of contemporary American Jewish life with special emphasis on the diverse forms of Jewish identification found in American Jewry. Topics include Reform, Conservative, and Orthodox Judaism; Jewish family life including intermarriage; and the relationship of Jews to the general society and to other ethnic groups. Mr. Sklare
NEJS 153b. Sephardic Jewry	<input type="checkbox"/> Not offered 1986-1987 From the mass conversions of Jews to Christianity in 1391 to the establishment of the Spanish Inquisition in 1478, and beyond into the sixteenth and seventeenth centuries, the role and position of Spanish and Portuguese Jewry in their own and in Iberian and world history underwent profound changes. This course examines the social and intellectual history of professing Sephardic Jewry at home and abroad, of believing New Christians, and of the secret Jews known as Marranos, many of whom later reemerged as Jews in such centers as Venice, Amsterdam and Constantinople.	NEJS 162b. The Rise of Modern Yiddish Culture	Yiddish, the language spoken by nearly all East European Jews, was historically denigrated as a jargon unsuited for higher cultural expression. This course will examine the process by which Yiddish became the vehicle for a sophisticated modern culture, encompassing poetry, prose, literary and social criticism, theater, journalism, education and scholarship. Following an overview and analysis of Yiddish culture in Russian and Poland between 1880 and 1925, we will consider the challenges which it faced in three radically new settings—the USSR, Palestine and America. All readings will be in English. Mr. Fishman
NEJS 154b. Introduction to Modern Arabic Political Literature	<input type="checkbox"/> Not offered 1986-1987 A survey of representative Arabic political literature in the twentieth century. This course is intended to prepare students to read and understand modern Arabic political writing against the background of contemporary historical events and intellectual currents. Among the authors studied will be Qustantin Zuraik, Sati al-Husri, Gamal Abdel-Nasser, Michel Aflaq.	NEJS 163a. The Sociology of the American Jew	<input type="checkbox"/> Not offered 1986-1987
NEJS 156b. Man and the Gods: Mythology and Magic of the Ancient Near East	<input type="checkbox"/> Not offered 1986-1987 An introduction to the Myth and Magic of the Ancient Near East. Special attention will be paid to how the myths express an understanding of the Gods and the world, and how magic deals with anxieties of human existence.	NEJS 164b. The Sociology of the American Jewish Community	The role of the sub-community in American society; Jewish communal services in medieval and modern times; contemporary American Jewish communal forms; religion, community relations, overseas aid, social welfare and relationship with Israel. Mr. Sklare

NEJS 166a. Modern Jewish History to 1830	<p>□ Not offered 1986-1987</p> <p>Major themes will include: Enlightenment and Haskalah in eastern and western Europe, Hasidism, Emancipation and the argument for and against Emancipation, Assimilation and the problem of the marginal Jew, the Science of Judaism, the development of denominationalism in Judaism.</p>	NEJS 171b. Trends and Values in Yiddish Literature	<p>□ Not offered 1986-1987</p> <p>A study (in English) of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem.</p>
NEJS 166b. Modern Jewish History 1830-1948	<p>□ Not offered 1986-1987</p> <p>Major themes will include: integration and assimilation, migration, nationalism, Zionism, non-Zionism, anti-Zionism, Diaspora nationalism, western and eastern Jewry in the period between the World Wars, the Holocaust and the establishment of the State of Israel.</p>	NEJS 174b. <i>Pirkei Avot — The Sayings of the Fathers: In Its Historical Setting</i>	<p>□ Not offered 1986-1987</p>
NEJS 168a. History and Culture of the Jews in Eastern Europe to 1815	<p>For centuries, Eastern Europe was one of the world's most vibrant centers of Jewish life. In this course we will plot the growth and development of East European Jewry from its infancy until the beginning of modern times. Particular attention will be paid to the social and cultural features which distinguish this Jewry from others—the Yiddish language, the shtetl and Hasidism. We will also examine the process by which Western ideas of enlightenment and modernity began to make inroads into Eastern Europe, and challenge traditional values and institutions.</p> <p>Mr. Fishman</p>	NEJS 175a. History of Zionism	<p>The rise and development of the Zionist idea. Zionist parties, Zionist politics, and Zionist diplomacy in relation to Jewish history and international affairs from 1880 to 1950. Zionism today.</p> <p>Mr. Reinharz</p>
NEJS 168bR. History of the Jews in the Soviet Union	<p>Topics will include: Lenin and the "Jewish question," the Jewish sections of the Communist party, the rise and fall of Soviet Yiddish culture, the Holocaust in the Ukraine and White Russia, antisemitic policies and propaganda in the post-war period, the emigration of the 1970s.</p> <p>Mr. Fishman</p>	NEJS 176a. Judaism and Christianity in the First Centuries	<p>□ Not offered 1986-1987</p>
NEJS 169aR. The Destruction of European Jewry	<p>The function of antisemitism in the comparative history and politics of Nazism; the Holocaust organization and the victims' responses; allied policies and Western reactions; post-war punishment and reparations. Interdisciplinary approaches to historical sociology and legal philosophy will be applied.</p> <p>Mr. Jick</p>	NEJS 177a. Agnon and His Contemporaries: Hebrew Literature in Translation	<p>□ Not offered 1986-1987</p>
NEJS 170b. History and Culture of the Jews in Eastern Europe, 1815-1939	<p>This course will focus on the great challenges and changes which were experienced by East European Jewry in modern times. These include anti-Semitism in its Tsarist, Soviet and Polish forms; the Jewish Enlightenment and the emergence of a secular Jewish culture in Yiddish and Hebrew; the rise of modern political currents—Zionism, Diaspora and Nationalism, and Socialism; and the liquidation of Jewish institutions in the Soviet Union.</p> <p>Mr. Fishman</p>	NEJS 182a. Introduction to Jewish Bibliography	<p>The aim of the course is to acquaint students in the various fields of Judaic studies with the general bibliographic tools and the bibliographies in the major sub-fields. This course will concentrate on general Judaica/Hebraica bibliographies and on subject bibliographies in such fields as Jewish history, Jewish philosophy, Hebrew language and literature, antisemitism, Holocaust studies, etc.</p> <p>Mr. Cutter</p>
		NEJS 182aR. Introduction to Jewish Bibliography	<p>See NEJS 182a.</p> <p>Mr. Cutter</p>
		NEJS 184a. Arabs and Jews in Palestine 1856-1948	<p>See History 184a.</p> <p>Mr. Wasserstein</p>
		NEJS 187bR. Biblical Images, Motifs and Ideas in Modern Jewish Poetry	<p>The Bible has been a constant and influential presence not only in liturgical poetry but as well in modern secular poetry. The course will examine the changing impact of the Bible in the works of Chaim Nachman Bialik, Shaul Tchernikovsky, Avraham Shlonsky, Uri Zvi Greenberg, Chaim Gouri, Yehuda Amichai, Natan Zach and others.</p> <p>Ms. Ramras-Rauch</p>

NEJS 203a. Biblical Historiography	An examination of representative types of historical writings in the Bible and their relationship to ancient events and to political and religious ideologies. The problems of writing modern histories of ancient Israel will also be explored.	NEJS 317-340. Reading Courses	Special tutorials for advanced graduate students.
	Prerequisite: Reading knowledge of Biblical Hebrew.	317a and b. Readings in Assyriology	Mr. Abusch
	Mr. Brettler	318a and b. Readings in Medieval Jewish Philosophy	Mr. Ivry
NEJS 203b. Bible and Ancient Near East Studies	Ongoing seminar examining the major works in modern biblical and ancient Near Eastern studies, with special focus on methodology and trends of research.	319a and b. Readings in Judaeo- Arabic Literature	Mr. Ivry
	Mr. Brettler	320a and b. Readings in Islamic Philosophy	Mr. Ivry
NEJS 206a. Advanced Akkadian: Literary Texts	Mr. Abusch	321a and b. Readings in Medieval Jewish Philosophy	Mr. Fox
NEJS 206b. Advanced Akkadian: Literary Texts	Mr. Abusch	322a and b. Readings in Modern Jewish Philosophy	Mr. Fox
NEJS 210a. Seminar on the Institutional Development of the American Jewish Community	Mr. Jick	323a and b. Readings in Jewish Thought	Mr. Fox
NEJS 210b. Seminar on Strategies of Jewish Continuity in America: Options and Alternatives	Mr. Jick	324a and b. Readings in Hebrew	Reading of scholarly articles in Hebrew. Designed to help prepare NEJS graduate students for the graduate reading examination. Open to qualified undergraduates. Permission of instructor required. Prerequisite: Good comprehension and reading fluency.
			Ms. Nevo-Hacohen
NEJS 230a. Seminar in Medieval Jewish Philosophy	Mr. Ivry	326a and b. Readings in Biblical Literature	Mr. Fishbane
		328a and b. Readings in Ancient Near Eastern Languages	Mr. Young
NEJS 287b. Methods in Jewish Community Research	See JCS 287b. Mr. Tobin	330a and b. Readings in the Sociology of the Jewish Community	Mr. Sklare

331a and b. Readings in Yiddish Literature	Mr. Szulkin	339a and b. Readings in Ottoman History and Civilization	Mr. Levy
332a and b. Readings in American Jewish History	Mr. Jick	340a and b. Readings in Modern Middle Eastern History	Mr. Levy
333a and b. Readings in the History of the Jews in Europe to 1800	Mr. Ravid	NEJS +01-+11. Dissertation Colloquium	Independent research for the Ph.D. degree.
334a and b. Readings in Modern Jewish History	Mr. Reinharz	401. Mr. Abusch	+07. Mr. Young
335a and b. Readings in East European Jewish History	Staff	402. Mr. Fox	408. Mr. Jick
337a and b. Readings in Talmudic and Midrashic Literature	Mr. Kimelman	403. Mr. Ivry	409. Mr. Fishbane
338a and b. Readings in Second Commonwealth and Hellenistic Judaism	Mr. Katchen	404. Mr. Reinharz	+10. Mr. Ravid
		406. Mr. Sklare	+11. Mr. Levy

The Hornstein Program in Jewish Communal Service

Objectives

The two-year program in Jewish Communal Service, leading to the Master of Arts degree, integrates Jewish studies and professional training, preparing students for positions in a variety of settings in the Jewish community, including federations, community centers, Hillel foundations, schools and other communal organizations.

A special one-year master's program is offered for students with graduate degrees in social work or Jewish studies. In addition, part-time study is permitted, but students must complete the program in no more than four years.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Hornstein Program in Jewish Communal Service. In addition, applicants are expected to submit results of either the Graduate Record Examination or the Miller Analogies Test, a statement which describes the applicant's Jewish training and background and future plans, and a sample of written material. Applicants are expected to arrange for a personal interview.

Faculty

Professor
Bernard Reisman,
Director:
American Jewish
communal studies.

Professor
Marvin Fox:
Jewish philosophy.
Rabbinic thought.
Modern Jewish
thought.

Professor
Leon A. Jick:
American Jewish
history.

Professor
Marshall Sklare:
Sociology of the
Jewish community.

Associate Professor
Reuven Kinelman:
Talmud and rabbinic
literature.

Associate Professor
Gary A. Tobin:
Jewish community
planning and research.

Assistant Professor
Jonathan S. Woocher:
Contemporary
Judaism. Jewish
identity.

Lecturer with rank of
Assistant Professor
Lois C. Swack:
Field work. Jewish
communal service.

Lecturer
Joshua Elkin:
Jewish education.

Lecturer
Daniel Margolis:
Jewish education.

Lecturer
Susan Shevitz:
Jewish education.

Lecturer
Bennett Solomon:
Jewish education.

Lecturer
Lawrence Sternberg:
Jewish community
relations.

See the Department of
Near Eastern and
Judaic Studies and the
Heller School catalog
for other faculty and
course offerings.

Degree Requirements

Master of Arts

Students in the Jewish Communal Service program may concentrate in one of the following three areas:

1. Group Work and Community Organization.
2. Management.
3. Jewish Education.

Program of Study.

Students are expected to complete a minimum of 14 courses, including study in the following areas: professional studies, contemporary Jewish studies and classical Jewish studies. Students may take courses at other Boston area graduate schools (Boston University and Boston College).

During intersession between the first and second terms of the first year, first-year students are expected to participate in 1) the **Betty Starr Colloquium on National Jewish Communal Organizations**, a two-day field trip for first-year students to visit national offices and meet with the staffs of major Jewish communal organizations in New York City, in order to examine their activities and roles in the American Jewish communal system; all students will participate in 2) the **Summer N. Milender Seminar in Jewish Communal Leadership**, led by a prominent leader in

Residence Requirement.

Jewish communal service for several days of discussion and workshops on campus on aspects of Jewish communal leadership; and 3) **Management and Social Work Modules**, one week mini-courses dealing with specific practical skills and issues on an intensive basis. These are offered by the Management of Human Services Program of the Heller School and other area schools of social work. All Jewish Communal Service concentrators are required to take one management module in the second year.

The residence requirement for this program is two years of full-time study or the equivalent in part-time study.

Language Requirement.

Fluency in Hebrew is required at a level comparable to two years of college training. Students not meeting this requirement upon entrance are required to enroll in courses in Hebrew language — **not for credit**.

Summer Study in Israel.

Joseph and Esther Foster Seminar in Israel on Contemporary Jewish Life is sponsored in cooperation with the Center for Jewish Education in the Diaspora of the Hebrew University and is required of all students at the completion of their first year of study. The 4-week program, held during May and June, is a combination of classes and field visits designed

	to provide an in-depth analysis of Israel. Costs for the Israel Seminar are partially subsidized by scholarships provided by the Joseph and Esther Foster Fund. Students are expected to pay the remainder of the cost.	Substantive Paper.	Students are required, during the second year, to submit a major substantive paper growing out of some phase of their fieldwork experience. The paper should analyze a practical issue in Jewish communal service in light of both the student's own experience and the relevant literature.
Fieldwork/Internship.	Students have two fieldwork experiences in a Boston area-Jewish educational or communal service organization. In the first year, fieldwork is 15 hours a week; in the second year, 20 hours. This schedule requires students to be in residence through the end of May and to plan for a shorter winter intersession than indicated in the University's Academic Calendar.		

Courses of Instruction

JCS 53bR. Introduction to Talmud	See NEJS 53bR. Mr. Kimelman	JCS 143b. Educational Leadership: Administration and Supervision	Patterns of educational organization, staff development and supervision and school management will be examined in light of recent qualitative and quantitative research about educational leadership. The implications for Jewish education will be analyzed. Mr. Margolis-Elkin
JCS 119bR. Curriculum/ Philosophy of Jewish Education	□ Not offered 1986-1987	JCS 157aR. History of Israel, 1948-Present	See NEJS 157aR. Mr. Reinharz
JCS 120b. Intermediate Talmud	See NEJS 120b. Mr. Kimelman	JCS 159a. Philosophy of Jewish Education	The purpose, goals and functions of Jewish education will be examined in the contexts of philosophical assumptions and historical circumstances. During the first half of the course students will be introduced to philosophers of education, both religious and secular; in the second half, the focus will shift to the historical forces which also shaped how Jewish education was conceptualized and provided. Staff
JCS 121a. Jewish Education: An American Jewish Enterprise	□ Not offered 1986-1987 This introductory course will examine various aspects of development of Jewish education in America, the types of Jewish schooling, organizational structures, politics, funding and communal dimensions of Jewish education. Questions of demographic shifts, the emergence of new educational settings, outreach to different populations and the effects of federal policies and international trends on Jewish educational schools will be explored.	JCS 160a. The Emergence of the American Jewish Pattern, 1654-1967	See NEJS 160a. Mr. Jick
JCS 124aR. Great Ages and Ideas of the Jewish People	See NEJS 1aR. Mr. Kimelman	JCS 161a. American Jewish Life and Institutions	See NEJS 161a. Mr. Sklare
JCS 125bR. Midrashic Literature; Sifre Deuteronomy	□ Not offered 1986-1987 See NEJS 125bR.	JCS 164b. The Sociology of the American Jew	See NEJS 164b. Mr. Sklare
JCS 127b. The Jewish Liturgy	□ Not offered 1986-1987 See NEJS 127b.	JCS 166a. Modern Jewish History to 1880	□ Not offered 1986-1987 See NEJS 166a.
JCS 142a. An Introduction to Post-Biblical Jewish History	□ Not offered 1986-1987 See NEJS 142a.	JCS 168bR. History of the Jews in the Soviet Union	See NEJS 168bR. Mr. Fishman

JCS 175a. History of Zionism	See NEJS 175a. Mr. Reinharz	JCS 209a. Issues in Jewish Communal Leadership and Policy	<input type="checkbox"/> Not offered 1986-1987 An introduction to basic skills and methods employed in current research on Jewish communal life. Significant examples of recent research will be examined and students will undertake small-scale research projects. Emphasis will be placed on how research and a knowledge of research tools and methods can enhance professional functioning and communal programs.
JCS 205a. Theory and Practice of Jewish Communal Service	An introduction to the field of Jewish communal service. This includes a history of Jewish communal services in this country, their relationship to Jewish traditions and to developments in the field of social welfare; the settings in which Jewish services are offered and the factors making for effective organizational performance. Mr. Reisman	JCS 212aR. Methods and Skills in Jewish Communal Research and Evaluation	<input type="checkbox"/> Not offered 1986-1987
JCS 205b. Theory and Practice of Jewish Communal Service	The focus of the course is developing a systematic approach to professional performance in Jewish communal organizations. This involves an analysis of contemporary societal developments which affect Jewish individuals and families. This analysis serves as the point of departure for assessing current programs and policies of Jewish communal agencies and for developing new programs to meet changing needs. Mr. Reisman	JCS 213b. The Jewish Tradition and Jewish Communal Service	<input type="checkbox"/> Not offered 1986-1987 An examination of the role which traditional Jewish values can play in shaping the perspective and work of the Jewish communal professional. The focus will be on how Jewish concepts — the sanctity of life, human dignity, community, <i>tzedakah</i> — can inform the ways in which communal workers think about and deal with critical issues affecting Jewish individuals, families and communities.
JCS 206b. Principles of Informal Education and Small Groups in Jewish Communal Service	This course has two components: 1) principles of informal, experiential education as these are applicable in Jewish communal work and 2) principles of small group dynamics — leadership, group processes, individual dynamics and self-awareness of the participants as it relates to group leadership roles in Jewish communal life. Mr. Reisman	JCS 242b. The American Jewish Community and the Jewish Family	<input type="checkbox"/> Not offered 1986-1987 The Jewish family is considered an important institution in the continued viability of the American Jewish community. Current trends in the Jewish American family will be explored through the use of sociological data and concepts. The Jewish community's perception of problems in the family and communal responses and policies will also be examined.
JCS 207a. The History and Ideology of the Jewish Community	<input type="checkbox"/> Not offered 1986-1987	JCS 248. Field Methods in Jewish Communal Service	Students are placed in selected Jewish communal organizations during the first year for two days a week of field practice. They receive individual supervision from an agency field supervisor, meet every week with faculty for a group seminar and for periodic individual conferences. Ms. Swack
JCS 208a. Contemporary Jewish Identity	<input type="checkbox"/> Not offered 1986-1987 An examination of the dynamics of Jewish identity: the changing historic and social forces which shape Jewish identity, resulting in a range of definitions of Jewishness in the contemporary era. Attention is addressed to the process by which current social institutions such as the family, Jewish education and Jewish communal programs seek to influence Jewish identity.	JCS 249. Field Methods Seminar in Jewish Education I	Limited to first year students. Ms. Shevitz

JCS 250. Field Methods in Jewish Communal Service and Jewish Education	Same as JCS 248, except students are in field work for three days a week. Mr. Reisman and Ms. Swack	Seminar on Contemporary Jewish Issues	During the fall semester the seminar will meet every Wednesday from 11 a.m. to 1 p.m. During the spring semester, the seminar will meet alternate Wednesdays. <i>Non-credit.</i>
JCS 251. Field Methods Seminar in Jewish Education II	Limited to second year students. Ms. Shevitz	JCS-SS 350. Foster Seminar in Israel on Contemporary Jewish Issues	Offered in cooperation with the Center for Jewish Education in the Diaspora at The Hebrew University.
JCS 287b. Methods in Jewish Community Research	This seminar is designed to acquaint both researchers and pre-professionals in Jewish communal service with basic research techniques. Students will receive "hands-on" experience in conducting research by participating in projects currently sponsored by the Center for Modern Jewish Studies, or by developing their own projects based on scholarly interest or field placements. The course will include readings on issues pertaining to Jewish communal research and will focus on the relationship between research methods and planning applications in Jewish communal agencies. Mr. Tobin		

Institute for Photobiology of Cells and Organelles

Objectives

The graduate program of the Institute is designed to give students an understanding of the photobiology of cells and organelles as part of the fundamental nature of living processes, and to train them to undertake original research in these areas.

The Institute rarely admits a graduate student who desires a master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology or biochemistry at this institution. These are: general biology, genetics, cell physiology and biochemistry, developmental biology, and at

least two additional elective courses. Students who are deficient in some of these subjects but whose records are otherwise superior may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Institute, graduate students will be advised and aided in planning their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research.

Faculty

Professor
Jerome A. Schiff,
Director:
Plant biochemistry
and physiology.
Photo-control of
intracellular
development. Sulphur
metabolism.

Professor
Martin Gibbs:
Photosynthesis and
plant physiology.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study.

The program leading to the M.A. in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the Institute. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the Institute. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study. By the end of the first year, each graduate student will choose a specific field of interest and will apply to the Director of the Institute for a permanent adviser to be assigned by the Institute. This adviser will serve as the chairman of a committee which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

Language Requirement.

There is no foreign language requirement for the master's degree.

Qualifying Examination.

At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study.

All students are expected to obtain a knowledge of the principles and techniques of the areas of: biochemistry and physiology (with emphasis on metabolism); genetics, regulation, DNA and repair; development; photobiology and molecular structure, structure in relation to function, photochemistry, microbiology and evolution (the five proposition areas of the qualifying examination). Proficiency in those areas of chemistry and physics related to photobiology is also expected. This knowledge will be acquired during the first two years through courses, seminars, reading, research rotations, etc., in preparation for the qualifying examination.

Language Requirements.

There is no foreign language requirement for the Ph.D. degree.

Research Rotation.

Students may rotate to any laboratory in the Institute on acceptance by the professor involved. A student should stay long enough

on each rotation to complete a piece of research and to learn the techniques involved. Research rotations will ordinarily be completed during the first year.

When the student completes his or her rotations, he or she petitions the Institute, with the consent of the professor concerned, to have a permanent adviser appointed. When the permanent adviser has been approved, this adviser will sign program cards for the student, advise him or her on courses, convene the proposition and examining committees, supervise the thesis and ultimately convene the thesis examining committee which is the final examination for the Ph.D. degree.

Ordinarily this examination should be completed before the active dissertation work is initiated. The student's adviser will appoint, with the consent of the Institute, two other faculty members to serve with him or her in the five core areas mentioned above with no more than one proposition in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designed by the Institute. The student will be examined orally on at least three of the acceptable propositions by the three members of the propositions committee plus additional faculty members as needed.

Admission to Candidacy.

Dissertation and Defense.

To be admitted to candidacy, the student must have (a) passed the qualifying examination, (b) shown a capacity for independent research, (c) been accepted by a graduate adviser.

Each student will conduct an original investigation. After admission to candidacy, a dissertation committee will be appointed by the Director of the Institute. It will consist of at least three staff members headed by the student's permanent adviser. This committee will guide his or her research activities toward the doctoral dissertation, and will read and evaluate the completed dissertation. The candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Qualifying Examination.

Courses of Instruction

Photobiology 100a. Photobiology of Cells and Organelles

Basic photobiology including an introduction to the physical and chemical concepts involved, the influence of the changing solar spectrum on the course of evolution, the catalytic uses of light by living systems including photoperception (phototropism, phototaxis and the evolution of visual systems), photomorphogenesis (blue light and re-far red systems), photoinduced rhythms, and other biological responses to light, energy storage including the photosynthetic apparatus, membranes and reaction centers, photosynthetic electron transport and phosphorylation, photosynthetic carbon metabolism and photoreduction, utilization of assimilatory power in reductive reactions, the deleterious effects of light including photodynamic action, photoprotection, erythral effects, ultraviolet damage to the genetic material and its photorepair and the evolution of repair systems and medical applications.

Prerequisites: Cell biology or its equivalent. Permission of the instructor.

Messrs. Gibbs, Schiff and Staff

Photobiology 245b. Comparative Physiology and Biochemistry of Plants

Photobiology 406. Photobiology and Plant Physiology

Photobiology +12. Photobiochemistry and Plant Metabolism

A continuation of Photobiology 245a. Prerequisite: Permission of the instructor.

Mr. Schiff

Mr. Schiff

Mr. Gibbs

Institute Journal Clubs

There will be a number of informal Journal Clubs which deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

Photobiology 245a. Selected Topics in Plant Metabolism

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Prerequisite: Permission of the instructor.

Mr. Gibbs

Physics

Objectives

The graduate program in physics is designed to equip students with a broad understanding of major fields of physics and to train them to carry out independent, original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence of the student's knowledge, understanding and proficiency in classical and modern physics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, may be carried out in the following areas.

Theoretical Physics: Quantum theory of fields; elementary particle physics; relativity; supergravity; string theory; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state, critical phenomena and phase transitions.

Experimental Physics: High energy experimental physics; atomic and molecular physics; solid state physics; nuclear magnetic resonance; phase transition phenomena; liquid crystal physics; light scattering; positron physics; radio astronomy; biophysical structure analysis.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor
Marcus T. Grisaru,
Chair:
Quantum field theory.
Elementary particles.
Supergravity.

Professor
Stephan Berko:
Experimental solid
state physics. Positron
interactions in solids.
Positronium physics.

Professor
Donald L. D. Caspar
(Rosenstiel Basic
Medical Sciences
Research Center):
Structural molecular
biology. X-ray
crystallography.

Professor
Stanley A. Deser:
Quantum theory of
fields. Elementary
particles. Gravitation
Supergravity.

Professor
Jack S. Goldstein:
Astrophysics. Science
and public policy.

Professor
Eugene P. Gross:
Quantum theory of
multiparticle systems.
Quantum theory of
solids. Kinetic theory.
Plasma physics.

Professor
Peter Heller:
Statistical physics.
Spin systems.

Professor
Lawrence E. Kirsch:
High energy
experimental physics.

Professor
Robert B. Meyer:
Liquid crystals.
Colloids. Polymers.

Professor
Hugh N. Pendleton:
Mathematical physics.
Supergravity.

Professor
Alfred G. Redfield
(Rosenstiel Basic
Medical Sciences
Research Center):
Magnetic resonance.
Biophysics.

Professor
Howard J. Schnitzer:
Elementary particle
theory. Quantum
theory of fields. String
theory.

Professor
Silvan S. Schweber:
History and
philosophy of science.
Quantum theory of
measurements.

Associate Professor
Laurence F. Abbott:
Elementary particle
theory. Quantum
theory of fields.

Associate Professor
James R. Bensinger:
Experimental high
energy physics.

Associate Professor
Craig A. Blocker:
Experimental high
energy physics.

Associate Professor
Karl F. Canter:
Experimental low
energy positron
physics at surfaces
and disordered
systems.

Associate Professor
Robert V. Lange:
Educational software.

Associate Professor
David H. Roberts:
Theoretical
astrophysics. Radio
astronomy.

Associate Professor
John F.C. Wardle:
Radio astronomy.
Cosmology.

Associate Professor
**Hermann F.
Wellenstein:**
Experimental atomic
physics. Electronic
impact spectroscopy.

Assistant Professor
Eric S. Jensen:
Experimental solid
state physics.

Assistant Professor
Takashi Odagaki:
Theoretical solid
state physics.

Assistant Professor
**Rudolph
Oldenbourg:**
Physics of liquid
crystals and biological
materials.

Degree Requirements

Master of Arts

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

1. One year in residence as a full-time student.
2. Six semester courses of advanced work in physics. A thesis on an approved topic may be accepted in place of a semester course.
3. Satisfactory performance in the Qualifying Examination.

Qualifying Examination.

In the first year. Quantum Mechanics (Physics 102) and Electromagnetic Theory (Physics 101) must be taken by all students unless they are exempted. All students, whether exempted or not, must take the final examinations in these courses (both fall and spring semesters), which also serve as the qualifying examination although the course itself is not required. An oral examination given at the end of the first year completes the qualification requirements.

Course Requirements.

At least two graduate courses, with final examinations in the specialized courses list below, must be taken during the first three semesters: (1) Statistical Physics, (2) Solid State Physics, (3) Biophysics, (4) Elementary Particles, (5) Astrophysics, (6) Experimental Physics (Physics 109), (7) General Relativity. Note, however, that not all of the above courses will necessarily be given each year. One semester of Advanced Quantum Mechanics (Physics 202a) will be a required course for all students.

Doctor of Philosophy

1. Two years in residence as a full-time student.
2. Nine semester courses of advanced work in physics.
3. Outstanding performance on the Qualifying Examination.
4. Passing of an advanced examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
5. Doctoral thesis and final oral examination.

Advanced Examinations.

Advanced examinations will be in topics partitioned in the several areas of research interests of faculty. Faculty members working in each general area will function as a committee for this purpose and will provide information about their work through informal discussions and seminars. The advanced examination requirement consists of a written paper and an oral examination. While no original research by the student is expected, it is hoped that a proposal for a possible thesis topic will emerge. It is generally expected that the candidates will take the advanced examination in the field they wish to pursue for the Ph.D. theses, although there may be exceptions.

Program of Study and Course Requirements.

Normally, first-year graduate students will elect from the 100 series; second-year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his or her studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.") Students may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of graduate courses at Brandeis and that an honor grade in these courses was obtained.

Thesis Research.

After passing the advanced examination, the student begins work with an adviser who guides his or her research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The graduate committee of the physics faculty will appoint a dissertation committee to supervise the student's research. The student's dissertation adviser will be the chair of the dissertation committee. The committee will recommend the student for admission to candidacy for the doctorate on recommendation of his or her adviser.

Residence Requirements.

A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the master's requirements.

Dissertation and Final Oral Examination.

The doctoral dissertation must represent a piece of research of a standard acceptable to the faculty committee appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to the dissertation research.

Teaching.

It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Language Requirement.

There is no foreign language requirement for either the master's or the doctoral degrees.

Courses of Instruction

Physics 101a. Electromagnetic Theory I	Electrostatics, magnetostatics, boundary value problems. Mr. Schnitzer	Physics 107bR. Particle Physics	The phenomenology of elementary particles, strong, weak and electromagnetic interactions. Topics include properties of particles, kinematics and quantum mechanics of scattering and decay, phase space, quark model, unitarity symmetries and conversion laws. Mr. Blocker
Physics 101b. Electromagnetic Theory II	Maxwell's equations. Quasi-stationary phenomena. Radiation. Mr. Schnitzer	Physics 108b. Introduction to Astrophysics	<input type="checkbox"/> Not offered 1986-1987
Physics 102a. Quantum Mechanics I	Nonrelativistic quantum theory and its application to simple systems; the harmonic oscillator, the hydrogen atom. Perturbation theory. Mr. Gross	Physics 109a. Advanced Laboratory I	Methods and techniques of experimental research. Mr. Redfield
Physics 102b. Quantum Mechanics II	Systems of identical particles. Coupling of angular moments. Scattering theory. Time-dependent perturbation theory. Semi-classical analysis of interaction of atomic systems and electromagnetic waves. Mr. Gross	Physics 109b. Advanced Laboratory II	Methods and techniques of experimental work. Mr. Blocker
Physics 103aR. Statistical Physics	Review of thermodynamics and probability theory. Statistical postulates and ensembles. Behavior of non-ideal gases. Correlation functions, fluctuation theorems, Weiner-Khinchine theorem, generalized Nyquist relations. Mean-field theories of phase transitions; effect of fluctuations. Mr. Odagaki	Physics 110a. Mathematical Physics	<input type="checkbox"/> Not offered 1986-1987 Complex variables; Fourier and Laplace transforms; special functions, partial differential equations; Hilbert space and spectral theory.
Physics 104a. Solid State Physics I	The formal description of periodic systems. The vibrational and electronic properties of solids. Band structure and the Fermi surface. The transport and optical properties of solids. Mr. Odagaki	Physics 113a. First Year Tutorial	A review of physics from the most elementary topics to those treated in other first-year graduate courses. The environment for an oral qualifying examination is reproduced in the tutorial. Mr. Pendleton
Physics 104b. Solid State Physics II	Thermal, electric and magnetic properties of solids. Lattice vibrations. Specific heat. Structural probes. Fermi surfaces. Selected topics in superconductivity and ferromagnetism. Mr. Sneddon	Physics 113b. Second Year Tutorial	A continuation of Physics 113a. Mr. Grisaru
Physics 107a. Experimental Particle Physics	<input type="checkbox"/> Not offered 1986-1987 The principles upon which experimental atomic, nuclear, and particle physics are based. Subjects discussed include: relativistic kinematics, interactions of energetic particles in matter, accelerators and beams, particle detectors, and computer-based analysis techniques.	Physics 137a. Science in the Nineteenth Century	<input type="checkbox"/> Not offered 1986-1987
		Physics 137bR. Topics in the History of Twentieth Century Physics	<input type="checkbox"/> Not offered 1986-1987 The course will explore developments in physics during the twentieth century from a historical perspective paying particular attention to the wider context in which these advances took place.
		Physics 152b. Biological Assembly	See Biophysics 152b. Mr. Caspar

Physics 200aR. General Relativity I	Introduction to current research and problems in gravitational physics. Physical and mathematical background will be provided as needed, but emphasis will be on recent literature. Active participation by students in discussing the latter will be expected. Mr. Deser	Physics 240b. Seminar in Biophysical Research	See Biophysics 200b. Mr. Caspar
Physics 200b. General Relativity II	□ Not offered 1986-1987	Physics 301a and b. Astrophysics Seminar	Advanced topics and current research in astrophysics will be discussed. Fall Term: Mr. Roberts Spring Term: Mr. Wardle
Physics 202a. Advanced Quantum Mechanics	Nonrelativistic field theory and relativistic quantum mechanics. Graphical version of time-dependent perturbation theory. Application of group theory to quantum mechanics. Mr. Deser	Physics 302a and b. Elementary Particles Seminar	Seminar covers latest advances in elementary particle physics. Will include student presentations and invited speakers. Fall Term: Mr. Bensinger Spring Term: Mr. Kirsch
Physics 202b. Relativistic Quantum Field Theory	□ Not offered 1986-1987	Physics 303a and b. Positron Physics Seminar	Seminar covers latest developments in atomic, solid state and surface physics as studied using positron techniques. Will include student presentations and invited speakers. Fall Term: Mr. Berko Spring Term: Mr. Canter
Physics 204a. Topics in Condensed Matter Theory	Staff	Physics 304a. Solid State Seminar I	□ Not offered 1986-1987
Physics 204b. Topics in Condensed Matter Theory	□ Not offered 1986-1987	Physics 305a and b. Liquid Crystal Physics Seminar	This seminar studies recent advances in the physics of liquid crystals and related systems such as microemulsions, colloidal suspensions, and polymer solutions. Fall Term: Mr. Meyer Spring Term: Mr. Oldenbourg
Physics 207a. Plasma Physics	□ Not offered 1986-1987	Physics 306a and b. Theoretical Solid State Physics Seminar	Advanced topics and latest developments in theoretical condensed matter physics will be discussed. Mr. Odagaki
Physics 208a. Cosmology	□ Not offered 1986-1987	Physics 311a. Advanced Topics in Mathematical Physics	□ Not offered 1986-1987
Physics 210a and b. Theoretical Seminar I, II	Analysis of important recent developments in theoretical physics. Mr. Grisar	Research Courses	
Physics 211a. Computational Physics	□ Not offered 1986-1987 Numerical differentiation and integration. Curve fittings. Numerical solution of elliptic, parabolic and hyperbolic differential equations. Molecular dynamics. Monte Carlo simulation. Monte Carlo renormalization group technique.	Physics +05. Experimental High Energy Physics	Mr. Blocker
Physics 212a. Condensed Matter Physics Seminar I	Analysis of important recent developments in condensed matter physics. Mr. Odagaki	Physics +06. Experimental Elementary Particle Physics	Mr. Bensinger
Physics 212b. Condensed Matter Physics Seminar I	A continuation of Physics 212a. Mr. Odagaki	Physics +07. Experimental Elementary Particle Physics	Mr. Kirsch
Physics 213a and b. Tutorial in Physics I, II	Staff		

Physics 408.
Theoretical
Elementary Particle
Physics

Mr. Abbott

Physics 409.
Theoretical
Elementary Particle
Physics

Mr. Deser

Physics 410.
Theoretical
Elementary Particle
Physics

Mr. Grisaru

Physics 411.
Theoretical
Elementary Particle
Physics

Mr. Pendleton

Physics 412.
Theoretical
Elementary Particle
Physics

Mr. Schnitzer

Physics 413.
Theoretical
Elementary Particle
Physics

Mr. Schweber

Physics 414.
Experimental Solid
State Physics

Mr. Berko

Physics 415.
Experimental Solid
State Physics

Mr. Canter

Physics 416.
Statistical Physics

Mr. Heller

Physics 417.
Theoretical Solid
State Physics

Mr. Sneddon

Physics 418.
Theoretical Solid
State Physics

Mr. Gross

Physics 419.
Theoretical Solid
State Physics

Mr. Lange

Physics 420.
Experimental Solid
State Physics

Mr. Odagaki

Physics 421.
Relativity

Mr. Deser

Physics 422.
Mathematical
Physics

Mr. Grisaru

Physics 423.
Mathematical
Physics

Mr. Schweber

Physics 424.
Mathematical
Physics

Mr. Pendleton

Physics 425.
Statistical Physics

Mr. Gross

Physics 426.
Astrophysics

Mr. Goldstein

Physics 427.
Astrophysics

Mr. Roberts

Physics 428.
Astrophysics

Mr. Wardle

Physics 429.
Structural Biology

Mr. Casper

Physics 430.
Experimental Solid
State Physics

Mr. Jensen

Physics 431.
Experimental
Condensed Matter
Physics

Mr. Oldenbourg

Physics 432.
Experimental
Atomic and
Molecular Physics

Mr. Wellenstein

Physics 436.
Biophysics

Mr. Redfield

Physics 437.
Experimental
Condensed Matter
Physics

Mr. Meyer

Politics

Objectives

The graduate program in Politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

Faculty

Professor
Robert J. Art.
Chair:
International relations;
American foreign
policy.

Professor
Seyom Brown.
International relations;
American foreign
policy.

Professor
Donald Hindley.
Comparative politics;
South East Asia; Latin
American politics.

Professor
Mark Huthings.
Political theory.

Professor
Martiu A. Levin.
American politics;
Urban politics.

Professor
Roy C. Macridis.
Comparative politics;
Western Europe.

Professor
Ruth S. Morgenthau.
Comparative politics;
Africa.

Professor
Peter Wolf.
American politics;
Administrative law.

Associate Professor
Jeffrey B. Abramson.
Political theory;
Constitutional law.

Associate Professor
Martin A. Levin.
American politics;
Urban politics.

Associate Professor
R. Shep Melnick.
American politics;
Public law, and
regulation.

Associate Professor
Susan M. Okin.
Political theory.

Associate Professor
Ralph Thaxton.
Comparative politics;
Peasants and
revolution.

Assistant Professor
Steven Burg.
Comparative politics;
U.S.S.R.; Eastern
Europe.

Assistant Professor
James Hollifield.
Comparative politics.

Assistant Professor
Sidney Milkis.
American government.

Assistant Professor
David Spiro.
International political
economy.

Degree Requirements

Master of Arts

Normally, no one will be accepted into the program who is not a doctoral candidate. However, the M.A. degree may be awarded upon satisfactory completion of one year of residence with a minimum of six courses, the submission of an approved specimen of graduate-level scholarly writing, and either the demonstration of proficiency in a foreign language or satisfactory completion of two semester courses of statistics or satisfactory completion of the scope and methods seminar as described under the Ph.D. research tools requirements below. (Courses taken in language, statistics or scope and methods will not be counted toward the six courses required for the M.A. degree.)

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) supervised independent study facilities within the department, (c) supervised teaching assistantships, (d) opportunities for study in the consortium of universities in the Boston area, and (e) the opportunity to incorporate work in related and relevant fields, e.g., economics, anthropology, philosophy. Each student is assigned to a departmental adviser who will help plan a professional and pertinent program of study. A continuity of faculty direction is insured throughout the program with allowance for shifts in curricular interest.

Program of Study.	<p>The student must complete two years in residence and a minimum of twelve semester courses. Students with an M.A. in political science from other institutions may petition at the end of one year to have their previous graduate courses accepted for Brandeis credit; this may relieve them of as much as a year of residence requirement. (However, they must satisfy all Brandeis requirements: distribution of curriculum, language, etc.) For distribution, each graduate student will be required to take three of the following fields: American Government, Comparative Government, International Relations, Political Theory, or two of the above plus a category of study at the graduate level in another department of the University, as shall be judged valid for the student's program by this department.</p> <p>Within each sub-field chosen, students are expected to have a broad knowledge of the major theoretical and analytical approaches, a more intensive familiarity with one or more functional areas of the sub-field, and special expertise in particular geographic areas, policy issues and/or historical periods. The requirements for a student majoring in each sub-field are somewhat more extensive than those for a student choosing it as a second or third field. The specific requirements for each sub-field may be obtained from the Politics Department.</p> <p>The standard work load for full-time students is at least three courses in each semester of their first two years of study. Fourth courses and audits are encouraged, but the load is deliberately set so that the student may supplement his or her regular course work with independently motivated reading and scholarship. Reading courses will not be offered to first-semester students and will be discouraged generally during the first year. By the end of the first year, students should have identified their major and at least one of their minor fields of interest, and should make this known to their adviser and the Graduate Studies Chairman.</p>	Research Paper.	<p>Each second-year graduate student is required to submit a high-quality research paper, which must be approved in its final version by two members of the department (appointed by the graduate adviser in consultation with the student) before the student will be allowed to take the comprehensive Ph.D. qualifying examinations.</p> <p>A student may be admitted to candidacy for the Ph.D. degree upon completing the course and research paper requirements, passing the qualifying examination, fulfilling the methodology requirement and obtaining departmental approval of the subject and preliminary précis of the dissertation.</p> <p>Normally at the end of the fourth semester or early in the fifth, a formal oral and written examination for candidacy for the Ph.D. will be given covering the student's three fields but with emphasis on the sub-field(s) in which the student has done the most work. Each of the examinations is individual: it responds to the approved program of the student. The written examinations may be taken, upon arrangement, within any four-month period. The orals are taken no later than two weeks after the last written examination. Students are examined orally in their three fields simultaneously.</p> <p>However, each student must complete the Ph.D. qualifying examinations by the end of his/her fifth semester in the program, and must submit a dissertation prospectus by the end of the sixth semester. Any extension must be specifically granted by the Graduate Committee.</p>
		Candidacy for the Ph.D.	
Research Tools Requirement.	<p>Prior to admission to Ph.D. candidacy, each student is required to: 1. Pass with a graduate grade (B- or above) the Politics Department's Seminar in Scope and Methods. Credit for this one semester course may be counted toward fulfillment of the Ph.D. course requirements. A similar course taken elsewhere may be used to fulfill this requirement, subject to the approval of the Graduate Committee. 2. Either a. pass a language examination (normally administered within the department) designed to test for a reading knowledge of a foreign language sufficient to conduct doctoral dissertation research, or b. pass with a B- or above an approved two-semester course in statistics. Neither courses taken in conjunction with the language examination nor statistics courses may be counted for course credit toward the Ph.D.</p>	Dissertation and Defense.	<p>The dissertation will be completed under the supervision of the appropriate member of the departmental faculty. It must be sponsored by a departmental committee of at least two members and have the approval of the graduate committee of the department. It is assumed that the writing of the dissertation will take at least one year and, barring exceptional circumstances, not more than two and one-half years. The student must successfully defend the dissertation at a final oral examination conducted by his or her two departmental supervisors and another professor from outside the department or from another university.</p> <p>As determined by funds and undergraduate enrollments, the department compensates students for teaching assistant work in an amount customarily based on the type and amount or work performed. First-year students do not normally receive teaching assistantships. It is the policy of the department that teaching experience is a normal and necessary part of the graduate training program and that ideally all students should have this opportunity.</p>
Evaluation of First Year.	<p>At the end of each student's first year in the graduate program, there will be a consultation between the student and three members of the department to evaluate the student's academic progress, and to help plan the student's subsequent work.</p>	Teaching Assistantships.	

Courses of Instruction

Seminars for Graduate Students

Politics 201b.
**Seminar: Political
Research and
Analysis**

The objective of the course is to provide students with an introduction to research methods and techniques of analysis appropriate for processing and analyzing political data. The emphasis will be on teaching students to understand and critique various methodologies used in political science, including historical/structural analysis, survey research, statistical analysis and formal theory.

The first section of the course will be devoted to some preliminary reflections on the study of politics, particularly the scientific method, ethical and philosophical issues (e.g., a critique of behavioralist and positivist approaches), and the criteria for good theory. The course will also introduce students to the basic concepts and uses of statistics, particularly correlation, regression and problems of causal inference.

Mr. Hollifield

Politics 203a.
**Seminar:
Comparative Politics**

□ Not offered 1986-1987

An examination of the approaches, concepts and theories of the field of comparative politics.

Politics 204bR.
**Seminar:
International
Relations Theory**

An examination of the approaches, concepts and theories in the field of international politics.

Mr. Brown

Politics 205b.
**Seminar: American
Politics**

An examination of the approaches, concepts and theories in the field of American politics.

Mr. Levin

Politics 206bR.
**Seminar: Political
Theory**

□ Not offered 1986-1987

An examination of the approaches and concepts in the field of political theory.

Seminars for Graduate Students and Advanced Undergraduates

Politics 208b.
**Seminar: Liberty
and Equality in
American Politics**

Examines how competing conceptions of liberty and of equality have affected American political life. Readings include the *Federalist Papers*, Tocqueville's *Democracy in America*, the Lincoln-Douglas debates, and material on freedom of the press, freedom of religion, desegregation, affirmative action and emergency powers.

Mr. Melnick

Politics 215b.
**Seminar:
Constitutional Law
and Theory**

An advanced research seminar on selected issues of constitutional law.

Mr. Woll

Politics 218b.
**Research Seminar:
Voting Behavior**

□ Not offered 1986-1987

This course provides students with an opportunity to research a topic of interest on voting behavior in the U.S. Attention will be paid to various theories that have been offered to explain voting, as well as the basic empirical methodologies used to investigate political behavior. In consultation with the instructor, each student will undertake the completion of a research project based on a computer analysis of recent elections in the U.S.

Politics 222bR.
**Seminar: Policy
Analysis and Policy
Implementation**

This is a course in political economy — the interface of economics and political science. It uses concepts of economics and political science to develop better analysis of public sector issues in order to ameliorate social problems. It integrates formal techniques of analysis (such as cost-benefit analysis, decision theory, modeling), with a concern for political feasibility and the constraints of implementation, especially those flowing from the nature of organizations. Problem areas will be chosen to illustrate the dual dilemmas in imperfect public interventions.

Mr. Levin

Politics 223a.
**Seminar:
Government,
Business and
American Politics**

□ Not offered 1986-1987

This seminar examines the interaction of economics and politics in the American political system. A good deal of emphasis is placed on the politics of regulation, and on the philosophical and historical context in which government-business relations have developed. Using environmental and consumer regulation as examples, the course examines the prospects for regulatory reform, and the effects on the public interest of political efforts to curb the impact of federal intervention in society.

Politics 231b.
**Seminar: Advanced
Topics in Soviet
Politics— Multi-
Nationality in Soviet
Politics**

This course is intended to provide advanced undergraduate and graduate students with an opportunity to engage in research and discussion of selected issues in Soviet domestic politics or foreign policy.

Mr. Burg

Politics 247b.
**Seminar: The
Modern Chinese
Revolution**

This course provides an in-depth exploration of the origins, process and consequences of the modern Chinese revolution. It focuses specifically on Western social science theories and interpretations of the revolution. It also provides a comprehensive perspective on revolution in twentieth century China and revolutionary movements in other parts of the globe.

Mr. Thaxton

Politics 248a.
Seminar:
Contemporary
Chinese Politics

This course provides a broad and in-depth understanding of key issues in contemporary Chinese politics — China after 1949. It is especially concerned with the role of the state in promoting economic development, social betterment, political stability and justice.

Mr. Thaxton

Politics 248b.
Seminar: Political
Institutions

This seminar will introduce the students to the study of major political regimes and their institutions and to the processes of institutionalization. Major political structures — the executive, legislatures, bureaucracies, political parties, will be studied comparatively in democracies, authoritarian and totalitarian regimes. In all cases governmental institutions will be linked with societal forces — particularly interest groups and associations and with levels of modernization. We shall conclude with an effort to “evaluate” regime performance.

Mr. Macridis

Politics 252aR.
Seminar: The
Political Economy of
Advanced Industrial
Democracies

The seminar is designed to introduce students to the history and theory of political economy, giving particular attention to the relationship between capitalism, socialism and democracy. We also shall devote considerable time to the study of the development of the political economies of Western Europe and North America since 1945. This study will seek to determine the scope and role of government in the economies of the advanced industrial democracies.

Mr. Hollifield

Politics 254b.
Seminar:
Comparative Public
Policy

□ Not offered 1986-1987

The purpose of the seminar is to introduce the student to the basic theories and concepts used in order to compare public policies cross-nationally. An assumption of the seminar is that the analysis is concerned with national systems and less concerned with international systems. Our main concern will be to use policy analyses within systems.

Politics 257a.
Seminar: Politics
and Society in
Western Europe

The course treats Western Europe as a case study in political development and as a testing ground for theories of political support and legitimacy. It is designed to deal with three major topics relating to the political development of Western Europe: 1) the transition from feudalism and the creation of the modern capitalist state; 2) the processes of legitimation of the institutional order during and after the industrial revolution; and 3) the accommodation of industrial workers and the rise and fall of class politics.

Mr. Hollifield

Politics 258a.
Seminar: Political
Participation

An examination of the major models, or conceptualizations of participation and their ideological or political underpinnings, and an exploration of the variety of actual forms of participation and “regime-type,” and attempts to differentiate “participation” from other forms of political behavior, such as “mobilization” or “involvement,” and thereby distinguish between “citizens” and “subjects.”

Mr. Burg

Politics 266b.
Seminar: Issues in
International
Political Economy

Selected theories of international relations will be used to analyze current problems in international political economy. Issues such as global debt, Third World development, North-North and North-South economic relations, and resource politics will be examined in depth.

Mr. Spiro

Politics 269a.
Seminar: The
Diplomacy of Henry
Kissinger

□ Not offered 1986-1987

An examination of Henry Kissinger's philosophy and practice of statecraft. Analysis of his historical and policy-prescriptive writings prior to his assumption of office in 1969. Evaluation of his performance in office through a detailed examination of the foreign policies and crises behavior of the Nixon and Ford administrations.

Politics 274bR.
Problems of
National Security

An analysis of current issues in national security policy through examination of basic theories on the role and utility of force in international relations. Topics covered include nuclear deterrence, force planning and budgeting arms control, force projection in the Persian gulf, proliferation, and the NATO alliance.

Mr. Art

Politics 279a.
Seminar: The
Politics of Food
Security

Why is there hunger in a world full of grain? Why is economic growth not enough to end famine? What policies promote adequate production and equitable distribution of food supplies? Readings focus on international as well as national attempts to secure access to food at acceptable prices. How food policy affects rise and fall of governments is examined in case studies.

Ms. Morgenthau

Politics 286a.
Seminar: Political
Ideologies

An examination of selected political theories and theorists, and the translation of theories into political movements. Emphasis will be placed on the latter with reference to liberal, Marxist and conservative parties in the nineteenth and twentieth centuries. Students will be asked to make presentations dealing with aspects of such movements.

Mr. Macridis

Politics 302-318a. Readings in Politics	302a and b. Mr. Brown	311a and b. Mr. Levin	Politics 117aR. Administrative Law	Mr. Woll
	303a and b. Mr. Hindley	312a and b. Ms. Okin	Politics 121b. Limits of the Market and Public Intervention	<input type="checkbox"/> Not offered 1986-1987
	305a and b. Mr. Macridis	313a and b. Mr. Abramson		
	306a and b. Ms. Morgenthau	314a and b. Mr. Thaxton	Politics 123aR. Politics of Urban Justice	Mr. Levin
	307a and b. Mr. Melnick	315a and b. Mr. Burg		
	308a and b. Mr. Woll	316a and b. Mr. Hollifield	Politics 124a. Science, Technology and Politics	<input type="checkbox"/> Not offered 1986-1987
	309a and b. Mr. Art	317a and b. Mr. Milkis		
	310a and b. Mr. Hulliung	318a and b. Mr. Spiro	Politics 125aR. Political Change in Afro-American Communities	Mr. Pouncey
Politics 400-417. Dissertation Research	Independent research for the Ph.D. degree	411. Mr. Levin	Politics 127b. Managing Ethnic Conflict	<input type="checkbox"/> Not offered 1986-1987
	400. Mr. Abramson	412. Mr. Burg		
	402. Mr. Brown	413. Ms. Okin	Politics 128b. Contemporary Peasant Revolutions	Mr. Thaxton
	403. Mr. Hindley	414. Mr. Thaxton		
	405. Mr. Macridis	415. Mr. Hollifield		
	406. Ms. Morgenthau	416. Mr. Milkis		
	408. Mr. Woll	417. Mr. Spiro		
	409. Mr. Art			
	410. Mr. Hulliung			
In addition, the following advanced undergraduate courses may be taken for graduate credit. (See College Catalog for descriptions.)				
Politics 101a. Parties, Pressure Groups and Public Opinion	<input type="checkbox"/> Not offered 1986-1987		Politics 129a. Communism in Eastern Europe	<input type="checkbox"/> Not offered 1986-1987
			Politics 130bR. Soviet Domestic Politics	Mr. Burg
Politics 102bR.	See Sociology 170aR.		Politics 134b. The Arab-Israeli Conflict	See NEJS 147b. Mr. Levy
	Mr. Ross			
Politics 111a. The American Congress	Mr. Woll		Politics 140b. Politics of Africa	Ms. Morgenthau
Politics 112a. American National Institutions	Mr. Melnick		Politics 141a. International Politics of Southern Africa	<input type="checkbox"/> Not offered 1986-1987
Politics 113b. The American Presidency	<input type="checkbox"/> Not offered 1986-1987		Politics 141bR. Africa and World Politics	<input type="checkbox"/> Not offered 1986-1987
Politics 114a. Judicial Activism	<input type="checkbox"/> Not offered 1986-1987		Politics 143b. Third World Countries and Soviet Strategies	Mr. Pouncey
Politics 115a. Constitutional Law	Mr. Woll		Politics 144a. Political Change in Latin America I	Mr. Hindley
Politics 116b. Civil Liberties in America	Mr. Abramson			

Politics 144b.
Political Change in
Latin America II

Mr. Hindley

Politics 177aR.
Soviet Foreign
Policy

Mr. Burg

Politics 150a.
Politics of Southeast
Asia

Mr. Hindley

Politics 178a.
International Politics
of the Pacific

Mr. Thaxton

Politics 152aR.
The Political
Economy of
Advanced Industrial
Economies

□ Not offered 1986-1987

Politics 183bR.
Community and
Alienation: Social
Theory from Marx
to Freud

Mr. Hulliung

Politics 162a.
The Evolution of the
International System

See History 137a.
Mr. Schuker

Politics 187a.
Philosophies of War
and Peace

See Philosophy 159a.
Ms. Bok

Politics 163aR.
American Foreign
Policy in the
Twentieth Century

□ Not offered 1986-1987

Politics 191a.
Social and Political
Philosophy:
Democracy
and Disobedience

See Philosophy 151a.
Mr. Teuber

Politics 165bR.
Introduction to
Peace Studies

□ Not offered 1986-1987

Politics 194a.
Politics and the
Novel

□ Not offered 1986-1987

Politics 167bR.
International Law
and Conflict
Resolution

Ms. Ben-Naftali

Politics 196bR.
Romantic and
Existentialist
Political Thought

□ Not offered 1986-1987

Politics 168aR.
American Foreign
Relations in the
Twentieth Century

See History 163aR.
Mr. Schuker

Politics 198a.
Feminist Theory:
Gender, Power and
Justice

□ Not offered 1986-1987

Politics 168b.
American Foreign
Policy

Mr. Brown

Politics 172a.
Introduction to
International
Political Economy

Mr. Spiro

Politics 175b.
International
Relations in the
Middle East and
North Africa

Mr. Spiro

Psychology

Objectives

The graduate program in Psychology leads to the degree of Doctor of Philosophy. The goal of the program is to develop competent research psychologists and teachers who will become contributors to knowledge in psychology. Toward this end, an emphasis is placed on research activity, starting in the first semester of graduate study. The program of study reflects a belief that the student should develop an area of research specialization and also should be exposed to a range of topics in general psychology. Dissertation supervision is available in the following areas: Sensation, Perception, Memory, Learning, Thinking, Comparative, Developmental, Personality, Psychopathology, Social Psychology, Linguistics and Cognitive Science.

The Psychology Department also offers a program leading to the degree of Doctor of Philosophy in Psychology with specialization in Linguistics and Cognitive Science. This program focuses on mental representation, in particular the representation and processing of language. The program is designed to equip students with a broad understanding of contemporary linguistic theory and its relationships to other areas of psychology. The goal of the program is to train students to carry out independent, original theoretical or experimental research and to be able to bring their research to bear on wider issues.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Students are admitted on a competitive basis which includes evaluation of previous academic record, recommendations, results of the Graduate Record Examination (Aptitudes and Psychology Achievement Tests).

Applications to Linguistics and Cognitive Science should specifically mention interest in this program.

Faculty

Professor
Leslie Z. McArthur,
Chair and Director,
Social/Developmental,
Social psychology.
Interpersonal
attraction.

Professor
Ray S. Jackendoff,
Chair,
Program in
Linguistics and
Cognitive Science:
Linguistics. Semantic
theory, Music.

Adjunct Professor
Ashton Craybiel

Adjunct Professor
Marcel Kinsbourne

Professor
Raymond Knight:
Clinical psychology.
Experimental
psychopathology.

Professor
James R. Lackner,
Director, Spatial
Orientation
Laboratory: Human
experimental
psychology.
Psycholinguistics.

Professor
Ricardo B. Morant,
Director,
Experimental/Physio-
logical: Experimental
psychology.
Perceptual
mechanism. Sensation
and perception.

Professor
Zick Rubin:
Social psychology.
Interpersonal
relationships.

Professor
Arthur Wingfield:
Human memory.
Cognitive processes.

Professor
Edgar Zurif:
Neurolinguistics.
Psycholinguistics.

Associate Professor
Theresa M. Amabile:
Social psychology.
Creativity.

Associate Professor
Jane B. Grimshaw:
Linguistics. Language
acquisition.

Associate Professor
**Maurice
Hershenson**:
Perception.
Developmental theory.

Associate Professor
Joan Maling:
Linguistics. Syntactic
theory. Historical
syntax. Metrics.

Associate Professor
Alan S. Prince:
Phonological theory.
Metrics.

Associate Professor
James Todd:
Layout and motion
perception.

Associate Professor
**Malcolm W.
Watson**:
Developmental
psychology.

Associate Professor
Jerome Wodinsky:
Comparative
psychology. Learning
theory. Sensory
physiology.

Assistant Professor
Michael Berbaum:
Group problem-
solving and
decision-making.

Assistant Professor
Joseph Cunningham:
Developmental
psychopathology.

Assistant Professor
Marjorie Lachman:
Life-span
development. Adult
personality.

Degree Requirements

Doctor of Philosophy

Program of Study. Although there is a two-year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during residency.

Research. Each student will devote one-quarter of his or her time to research the first semester of the entering year. For all subsequent semesters, students shall devote a minimum of one-half time to research.

Research Reports. Students will submit reports on their research for the preceding year, in journal form, in time to permit evaluation of the first project by the end of the third semester, and of the second project by the end of the fifth semester. Satisfactory completion of the research projects is required for continuation in the program. Students who have satisfactorily completed the research requirements will be permitted to continue their work toward the doctorate with no formal requirement of a master's degree.

Course Requirements. Entering students will take two advanced courses and Psychology 210a in the first term of residence, one advanced course and Psychology 210b in the second term. After that they shall take two advanced courses per term in the second year, and one each term thereafter until admitted to candidacy for the doctorate. Each term, a student must take at least one graduate level course or seminar (100-level or above) that is not an Independent Readings or Research course. Only selected 100-level courses, determined by the Psychology Department, will count as advanced, graduate level courses. Graduate level course selection will not be restricted to the Psychology Department but will be arranged by the student in consultation with the faculty adviser.

Qualifying Examinations. Before being admitted to candidacy for the doctorate, each student must also pass a qualifying examination. During the student's third year, he or she will be examined in the historical, theoretical and empirical literature related to the student's area of specialization, broadly conceived. The chairman of the department, in consultation with the student and adviser, will appoint a three-member committee to administer the qualifying examination. The examination may be in either oral or written form. A student may petition the department to take the examination a second time if necessary.

Breadth Requirement. All graduate students must demonstrate breadth in the field of psychology before being admitted to candidacy for the Ph.D. This breadth requirement is fulfilled by demonstrating competence in at least six of the nine areas listed below. The requirements may be satisfied in any of three ways:

a. By having completed an undergraduate or graduate course in that area.

b. By completing an undergraduate or graduate course offered in that area at Brandeis.

c. By successfully passing the equivalent of any undergraduate final examination for that course.

d. Of the six courses, a minimum of two should be taken from areas in Group A and a minimum of two from Group B.

Group A

1. Physiological/Sensory Processes
2. Perception
3. Learning/Comparative
4. Cognition/Memory
5. Cognitive Science/Linguistics

Group B

1. Developmental
2. Social
3. Personality
4. Abnormal

Teaching Assistant Requirements.

Each student must work as a teaching assistant for a minimum of four courses, including the course Introduction to Psychology and at least one of the following courses: Statistics, Experimental, Developmental, Cognitive Processes, Sensory Processes, Perception, Social, Personality or Abnormal.

Language Requirement.

There is no foreign language requirement.

Admission to Candidacy.

A student may be admitted to candidacy for the doctorate upon fulfilling the above requirements.

Dissertation and Defense.

Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the department, a dissertation committee of three or more members will be appointed by the department chair, including the dissertation sponsor as chair of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his or her work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the department faculty.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the

chair of the department of a copy of the dissertation, signed by all members of the dissertation committee and one member from outside of the university, and a successful defense of the dissertation before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Master of Arts

Students in the Ph.D. program may petition for a Master of Arts degree upon completion of the following requirements: 1) One year minimum residency, 2) Acceptable master's thesis. (An acceptable first-year research report will count as a master's thesis.) 3) Completed breadth requirements.

Ph.D. in Psychology with Specialization in Linguistics and Cognitive Science.

This program focuses on the development of formal theories of mental representation. It emphasizes the unity behind approaches to mind within cognitive psychology and linguistics, with attention to the important contributions of computer science and philosophy. Application should specifically mention an interest in this program.

The degree requirements are as given above, except in the following respects:

Course Requirements.

a. All students will take the following courses in their first year:
Syntax
Phonology
Research Seminar (for credit)
Seminar in Cognitive Science
One of: Topics in Syntax, Topics in Semantics, Topics in Phonology

Breadth Requirements.

b. All students will take the following courses **every year until they are admitted to candidacy**:
Seminar in Cognitive Science
Two of: Topics in Syntax, Topics in Semantics, Topics in Phonology

c. **Beginning in the second semester** every student will take a minimum of one research course per semester. As part of the research requirement students attend the research seminar every year.

All programs must be approved by the graduate adviser.

In addition to the areas covered by the course requirements, students must demonstrate competence in four areas, two from Group A and two from Group B.

Group A

Psycholinguistics; neurolinguistics; language acquisition; historical/comparative linguistics.

Group B

Cognitive psychology; statistics (graduate level); logic/philosophy of mind; computer science/artificial intelligence.

Courses offered for satisfaction of the breadth requirement must be approved by the Linguistics and Cognitive Science faculty.

Research Reports.

Students will submit reports on their research in time to permit evaluation of the first project by the end of the third semester, and of the second project by the end of the fifth semester. Satisfactory completion of the research projects is required for continuation in the program.

Courses of Instruction

Psychology 120b. Man in Space

This course concerns the physiological and psychological consequences of prolonged exposure to weightlessness. The topics covered will include a) how orbital flight is achieved, b) spacecraft life support systems, c) circulatory dynamics, d) sensory-motor control and vestibular function in free fall. Emphasis is placed on the physiological and psychological adaptations necessary in space flight and how astronauts must readapt on return to earth.

Mr. Lackner

Psychology 123a. Psychology of Pictorial Representation

The main thrust of the seminar will be to explore the question of how visual reality is mediated by painting. The first meetings will examine the theories of, among others, Gombrich and Gibson. Later meetings will deal with specific issues relating to the representation of objects and persons; for example, anamorphic art and the problem of perspective, the representation of color and brightness relationships, object transparency, caricature and image, pictures as signals and symbols.

Mr. Morant

Psychology 130bR. Life-Span Development: Adulthood and Old Age

Seminar on advanced topics in life-span developmental theory and methodology. Substantive emphasis will be on intellectual and personality changes that occur in the second half of life.

Ms. Lachman

Psychology 132a. Cognitive Development

□ Not offered 1986-1987

Psychology 135bR. Seminar in Social Cognition

This course deals with research in impression formation and emotion perception. Information about people's psychological attributes that is provided in their face, voice and bodily movements will be considered. Issues of stereotyping, accuracy, and errors in person perception will be treated as well as developmental differences, individual differences, and cultural differences.

Ms. McArthur

Psychology 136aR. Advanced Topics in Developmental Psychology	The objective of this course is to provide students with detailed information about theories and special topics of research in developmental psychology. We will be covering research areas related to children's developing symbol use in non-verbal domains (such as symbolic play, fantasy, art).	Psychology 155a. Seminar in Visual Space Perception	Seminar will discuss major theories of perception: Gibson, Johansson, transactionalism, neo-Helmholtzian (Rock, Epstein, Wallach), computation (Marr, Ullman), hierarchical structure (Hershenson). Emphasis will be on fundamental properties of perception: size and shape constancy, and motion.
Mr. Watson		Mr. Hershenson	
Psychology 137bR. Social Interactions	<input type="checkbox"/> Not offered 1986-1987 Study of interaction among humans chiefly from an experimental perspective. Such processes as social facilitation, imitation, conformity, cooperation and competition, bargaining, coalition formation, group problem-solving and group decision-making are examined. Models of interaction involving conflict are applied to the analysis of behavior in selected natural contexts.	Psychology 156bR. Perceptual Development	<input type="checkbox"/> Not offered 1986-1987
Psychology 138aR. Social Relationships	An examination of social relationships, including parent-child relationships, friendships, marriage, and work relationships, viewed in the context of psychology, social structure, and culture. Attention will be given to research strategies for studying social relationships, and students will be encouraged to conduct their own research.	Psychology 160bR. Seminar on Sex Differences	<input type="checkbox"/> Not offered 1986-1987 This course will examine societal sex roles and lay beliefs about sex differences in light of evidence bearing on: 1) actual sex differences in ability and/or personality; 2) biological vs. social explanations for sex differences; 3) motivational and cognitive biases in the perception of group differences.
Mr. Rubin		Enrollment limited to 20.	
Psychology 139bR. Development of Play and Imagination	<input type="checkbox"/> Not offered 1986-1987	Psychology 161a. Clinical Psychology Practicum	<input type="checkbox"/> Not offered 1986-1987 This course, in conjunction with Psychology 161b, provides an intensive, supervised practicum experience in the provision of mental health services. Students pursue a program of reading and spend one day a week working in a clinical facility. Weekly class meetings are structured to provide opportunities for personal and professional growth through discussion of individual experiences in the clinical setting.
Psychology 140b. Social Psychology and Social Policy	<input type="checkbox"/> Not offered 1986-1987	Enrollment limited to 20.	
Psychology 145b. Aging in a Changing World	<input type="checkbox"/> Not offered 1986-1987	Psychology 161b. Clinical Psychology Practicum	<input type="checkbox"/> Not offered 1986-1986 A continuation of Psychology 161a. Enrollment limited to 20.
Psychology 150b. Organizational Psychology	This course covers the fundamentals of industrial/organizational psychology, including the topics of leadership, work motivation, organizational innovation, corporate culture, personnel selection, job evaluation, and group dynamics.	Psychology 167b. Schools of Psychotherapy	Theories and techniques of several schools of psychotherapy and behavior modification are considered. The theories of personality, methods of intervention, goals of therapy and relevant research will be emphasized.
Ms. Amabile		Mr. Knight	
Psychology 153a. Consciousness	<input type="checkbox"/> Not offered 1986-1987	Psychology 168a. The Psychology of Creativity	The purpose of this course will be 1) to explore the foundations of modern theory and research on creativity, and 2) to examine methods of stimulating creative thought and expression. The course material will include 1) psychodynamic, behavioristic, humanistic, and social psychological theories of creativity, 2) personality studies of creative individuals, 3) studies of creative environments, 4) methods of defining and assessing creativity, and 5) programs designed to increase both verbal and non-verbal creativity.
Psychology 154aR. Human Memory	This course presents a systematic analysis of current and traditional memory research and theory as it sheds light on both normal memory and cognitive function and on memory deficits following cerebral damage.	Ms. Amabile	
Mr. Wingfield			

Psychology 169b. Disorders of Childhood	This course will review issues of theory, research and practice in the areas of child and adolescent psychopathology and treatment. Special attention will be given to the need for examining abnormality in the context of normal developmental processes. The relationship between theory and practice will be explored through reading and discussion of theory, empirical research and clinical case material. Mr. Cunningham	Psychology 194b. Language and Mind	<input type="checkbox"/> Not offered 1986-1987 An examination of Noam Chomsky's approach to the theory of language, concentrating on the notion of innate ability to learn human languages . This course will discuss philosophical and psychological consequences of Chomsky's theory, discussing applications of his conceptual framework to the study of other human activities such as reasoning, perception, sensory-motor coordination and the understanding of music.
Psychology 172a. Temporal Patterning of Behavior	<input type="checkbox"/> Not offered 1986-1987 Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.	Psychology 195a. Introduction to Psychological Theory	A survey of psychological theories including Associationism, Structuralism, Functionalism, Gestalt, Behaviorism, Psychoanalysis and their modern derivatives. Emphasis is on the nature of explanation and the methods by which it is achieved. Mr. Hershenson
Psychology 173a. Psycholinguistics	See Linguistics 173a. Mr. Zurif	Psychology 197aR. Language Acquisition and Development	See Linguistics 197aR. Ms. Grimshaw
Psychology 180bR. Seminar: Writing and the Social Sciences	Examines the range of writing in the social sciences, both "popular" and "scholarly," including journal articles, dissertations, books, magazine articles, newspaper columns, and life studies. Students write and exchange feedback on short pieces, with a view toward preparing work for publication. Frequent visits by social scientists, writers, and editors. Mr. Rubin in collaboration with Mr. Zola	Psychology 199aR. Neuropsychology	This course is designed as an introduction to the field of neuropsychology. Topics will include the concepts of cerebral dominance and localization of function within the human brain, with special reference to language and related mental function. The aphasic syndromes will receive special attention, including their symptoms, progress, brain localization and concomitant cognitive disorders. Mr. Zurif
Psychology 181b. Medical Anthropology	See Anthropology 101b. Mr. Jacobson	Psychology 201a and b. Research Topics in Experimental Psychology	<input type="checkbox"/> Not offered 1986-1987
Psychology 182bR. Culture and Cognition	See Anthropology 161bR. Mr. Murray	Psychology 202b. Seminar in Human Spatial Orientation	Mr. Lackner
Psychology 184bR. Philosophy and Psychology	See Philosophy 101bR. Mr. Samet	Psychology 205a. Seminar in Perceptual Development	<input type="checkbox"/> Not offered 1986-1987
Psychology 185b. Philosophy of Mind	See Philosophy 156h. Mr. Samet	Psychology 206b. Computer Methods in Psychological Experimentation	<input type="checkbox"/> Not offered 1986-1987
Psychology 193bR. Tests and Measurements	<input type="checkbox"/> Not offered 1986-1987 This course covers test theory, types of measurement, the theory and measurements of reliability and validity, and test construction. The measurements of intelligence, achievement and personality are also considered.	Psychology 207a. Seminar in Perception	This course examines the various aspects of visual information by which objects and events in 3-dimensional space are perceived by human observers. Current research in both psychology and artificial intelligence will be considered. Mr. Todd

Psychology 208a. Seminar in Cognitive Sciences	Ms. Grimshaw	223a and b. Research in Social Psychology	Mr. Rubin
Psychology 209a. Advanced Seminar in Measurement Theory and Mathematical Modelling	□ Not offered 1986-1987	224a and b. Research in Speech Perception and Cognitive Processes	Mr. Wingfield
Psychology 210a. Advanced Psychological Statistics I	Probability and inferential statistics for experimental research. Rules of probability, random variables and their distributions, statistical inference, tests of hypotheses and confidence intervals for population means, principles of experimental design, the analysis of variance. Introduction to computer analysis using the SPSS and BMDP statistical packages. Staff	225a and b. Research in Visual Information Processing	Mr. Hershenson
Psychology 210b. Advanced Psychological Statistics II	Statistical procedures for quasi- and non-experimental research. Correlation and regression, multiple regression, partial and multiple correlation, the analysis of contingency tables (cross-tabulations), nonparametric statistics. Computer data analysis using SPSS and BMDP. <i>Prerequisite:</i> Psychology 210a or permission of the instructor. Staff	226a and b. Research in Cognitive Processes and Psychopathology	Mr. Knight
Psychology 213b. Cognition and the Brain	□ Not offered 1986-1987	227a and b. Research in Neurolinguistics and Psycholinguistics	Mr. Zurif
Psychology 216b. Research Seminar in Cognitive Sciences	In this seminar, students will present and discuss their ongoing research. Ms. Woolford	228a and b. Research in Syntax and Comparative Germanic	Ms. Maling
Psychology 218b. Seminar in Social Cognition	□ Not offered 1986-1987 This course deals with research in impression formation and causal attribution. Causal attributions for one's own behavior as well as for other people's behavior will be treated. Determinants of impression formation and causal attribution to be covered include social information, attention, motives and individual differences.	229a and b. Research in Person Perception	Ms. McArthur
Psychology 220-238. Courses in Research		230a and b. Research in Animal Behavior	Mr. Wodinsky
220a and b. Research in Spatial Orientation	Mr. Lackner	231a and b. Research in Social Psychology	Ms. Amabile
221a and b. Research in Semantics and Conceptual Structure	Mr. Jackendoff	232a and b. Research in Developmental Psychopathology	Mr. Cunningham
222a and b. Research in Human Spatial Orientation	Mr. Morant	233a and b. Research in Syntax and Language Learnability	Ms. Grimshaw
		234a and b. Research in Life- span Development; Adult Personality	Ms. Lachman
		235a and b. Research in Layout and Motion Perception	Mr. Todd
		236a and b. Research in Developmental Psychology	Mr. Watson
		237a and b. Research in Group Problem Solving and Decision-Making	Mr. Berbaum
		238a and b. Research in Metric and Phonological Theory	Mr. Prince

109	Psychology				
Psychology 250-268. Advanced Research Project	250a and b. Mr. Lackner	260a and b. Ms. Maling	Psychology 310b. Topics in Data Analysis for Social Scientists	□ Not offered 1986-1987	
	251a and b. Mr. Morant	261a and b. Ms. Amabile			
	252a and b. Mr. Rubin	262a and b. Mr. Berbaum	Psychology 320a and b. Advanced Tutorial in Spatial Orientation	Mr. Lackner	
	253a and b. Mr. Wingfield	263a and b. Mr. Cunningham			
	254a and b. Mr. Hershenson	264a and b. Ms. Grimshaw	Psychology 400-418. Dissertation Research	400. Mr. Lackner 401. Mr. Jackendoff 402. Mr. Morant 403. Mr. Rubin 404. Mr. Wingfield 405. Mr. Hershenson 406. Mr. Knight 407. Mr. Watson 408. Ms. Maling 409. Ms. McArthur	410. Mr. Wodinsky 411. Ms. Amabile 412. Mr. Cunningham 413. Ms. Grimshaw 414. Ms. Lachman 415. Mr. Todd 416. Mr. Berbaum 417. Mr. Zurif 418. Mr. Prince
	255a and b. Mr. Knight	265a and b. Ms. Lachman			
	256a and b. Ms. McArthur	266a and b. Mr. Todd			
	257a and b. Mr. Wodinsky	267a and b. Mr. Zurif			
	258a and b. Mr. Watson	268a and b. Mr. Prince			
	259a and b. Mr. Jackendoff				
Psychology 280-298. Advanced Readings	280a and b. Mr. Lackner	290a and b. Ms. Maling	Linguistics 100a. Introduction to Linguistics	A general introduction to linguistic theory and the principles of linguistic analysis. The central topic of the course is what speakers know about their language: syntax, semantics, and phonetics and phonology. In each area, students will construct detailed analyses of data from English and from other foreign languages. Additional topics such as historical linguistics and the psychological implications of linguistic theory will be covered as time allows.	
	281a and b. Mr. Morant	291a and b. Ms. Amabile			
	282a and b. Mr. Rubin	292a and b. Mr. Berbaum			
	283a and b. Mr. Wingfield	293a and b. Mr. Cunningham		Ms. Woolford	
	284a and b. Mr. Hershenson	294a and b. Ms. Grimshaw			
	285a and b. Mr. Knight	295a and b. Ms. Lachman	Linguistics 100aR. Introduction to Linguistics	See Linguistics 100a. Mr. Prince	
	286a and b. Ms. McArthur	296a and b. Mr. Todd	Linguistics 110a. Introduction to Phonology	This course is an introduction to Generative Phonology, which is a theory of natural language sound systems. It begins with a review of articulatory phonetics, followed by distinctive feature theory and the concept of a "natural class." The central section covers morphology and the nature of morphophonetics and universal properties of the rules that relate morphophonemic and phonetic representations. The course ends with discussion of a special topic such as syllable structure or word-formation.	
	287a and b. Mr. Wodinsky	297a and b. Mr. Zurif			
	288a and b. Mr. Watson	298a and b. Mr. Prince			
	289a and b. Mr. Jackendoff				
Psychology 300a. Proseminar in Social and Developmental	□ Not offered 1986-1987				
Psychology 304a. Research Methodology for Developmental and Social Psychology	This course provides a comprehensive review of empirical methodology in social and developmental psychology including: research ethics, hypothesis testing, experimental and quasi-experimental design, naturalistic observation, survey and evaluation research, clinical and applied research, data analysis, report writing, and peer review procedures.				
	Mr. Cunningham				
Psychology 312b. Introduction to Historical Linguistics	□ Not offered 1986-1987				
	Principles and methods of language change and linguistic reconstruction. Emphasis on the history and development of the Indo-European language family. Readings from earlier scholars (Meillet, Jakobson, Vendrycs, etc.) as well as discussion of present-day issues in historical and comparative linguistics. Practical exercises in comparative method and internal reconstruction.				

Linguistics 120b. Syntactic Theory	<p>This course extends the syntactic framework developed in the introductory course through the study of such problems as the complement system and constraints on transformations, with emphasis on their relevance to universal grammar.</p> <p>Prerequisite: Linguistics 100a.</p> <p>Ms. Woolford</p>	Linguistics 197aR. Language Acquisition and Development	<p>When a child knows a language he or she has successfully constructed a grammar of it; in the course of constructing the grammar the child must form hypotheses about the language and test them against the available data. The central problem of language acquisition is to explain what makes this formidable task possible. In the course, we will study and evaluate theories of language acquisition in this light, basing our conclusions on recent research in the development of syntax, semantics and phonology. The overall goal is to arrive at a coherent picture of the kinds of hypotheses children make, and the kinds of strategies they use as they progress toward mastery over their language.</p> <p>Ms. Grimshaw</p>
Linguistics 122bR. Investigations in an Unfamiliar Language	<p>Using a native speaker of an unfamiliar language (such as Turkish or Amharic) as a source of data, the class will investigate the structure of the language and compare it with the structure of English and other familiar languages. May be repeated for credit.</p> <p>Mr. Prince</p>	Linguistics 199a and b. Directed Research	Staff
Linguistics 130aR. Semantics	<p>□ Not offered 1986-1987</p> <p>This course explores the semantic structure of language in terms of current linguistic theory. Topics to be covered include the nature of semantic representation, functional structure, presupposition and reference.</p>	Seminars for Graduate Students	
Linguistics 135a. Linguistics and the Romance Languages	<p>□ Not offered 1986-1987</p>	Linguistics 215bR. Phonology	<p>Recent developments in phonological theory, with special emphasis on prosodic phonology including autosegmental theories of tone, nonlinear morphology and phonology, and metrical theories of stress. Required of first-year graduate students in Linguistics and Cognitive Science.</p> <p>Mr. Prince</p>
Linguistics 140a. History of the English Language	<p>□ Not offered 1986-1987</p>	Linguistics 217b. Topics in Phonology	<p>Topics drawn from recent research in metrical, autosegmental and lexical phonology. Requirements include a class presentation and a research paper. Material covered will vary from year to year.</p> <p>Ms. Yip</p>
Linguistics 150b. Introduction to Cognitive Science	<p>This course will consider how the mind is structured to represent and process information of relevance to language and other cognitive domains.</p> <p>Messrs. Zurif and Wingfield</p>	Linguistics 225bR. Syntax	<p>Recent developments in syntax, including such topics as constraints on rules, trace theory, government and binding, and lexical-functional grammar. Required of first-year graduate students in Linguistics and Cognitive Science.</p> <p>Ms. Maling</p>
Linguistics 153a. Consciousness	<p>□ Not offered 1986-1987</p>	Linguistics 226a. Topics in Syntax	<p>Current issues in the theory of syntax, focussing on research in Government Binding Theory and Lexical Functional Grammar. Topics covered will vary from year to year, but will generally include: anaphora, extraction, bounding conditions and lexical representation.</p> <p>Ms. Maling</p>
Linguistics 173a. Psycholinguistics	<p>An introduction to modern psycholinguistics with an emphasis on language comprehension and production. Questions concerning species-specificity and the neurological organization of language are included for consideration.</p> <p>Mr. Zurif</p>	Linguistics 236a. Topics in Semantics	<p>□ Not offered 1986-1987</p>

Russian

See Joint Program of Literary Studies.

Sociology

Objectives

The graduate program in Sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are required to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

Faculty

Associate Professor
Gordon A. Fellman:
Chair:
Marx and Freud.
Social stratification.
Peace studies.

Professor
Egon Bittner:
Sociology of law.
Social control.

Professor
George W. Ross:
Political sociology.
Social theory.

Professor
Morris S. Schwartz:
Social psychology.
Social psychiatry.
Peace studies.

Professor
Maurice R. Stein:
Communities.
Culture, counseling,
consciousness.

Professor
Irving K. Zola:
Sociology of health
and illness. Disability
studies. Deviance.
Field studies.

Professor Emeritus
Kurt H. Wolff:
Sociology of
knowledge.
Phenomenology and
sociology. "Surrender-
and Catch."

Associate Professor
Karen E. Fields:
Sociology of religion.
Sociology of
development.

Associate Professor
Charles S. Fisher:
Technology and
environment. Social
psychology of
consciousness.

Associate Professor
Gila J. Hayim:
Sociological theory,
critical theory,
phenomenology and
existential sociology.

Assistant Professor
**M. Jacqueline
Alexander:**
Sociology of health.
Political sociology.
Third world
development.
Sociology of women.

Assistant Professor
Kathleen Barry:
Feminist theory.
Family. Sociology of
education.

Assistant Professor
Peter Conrad:
Sociology of health
and illness. Deviance.
Field methods.

Assistant Professor
Michael W. Macy:
Quantitative methods.
Political sociology.
Class and
stratification.

Assistant Professor
Shulamit Reinharz:
Qualitative
methodology. Social
gerontology. Feminist
research. Social
psychology. Group
dynamics.

Degree Requirements

Doctor of Philosophy

Program of Study.	Students entering the Ph.D. program in Sociology are expected to undertake a two-year program of course work, as a part of which they are obliged to take the departmental Pro-Seminar (Sociology 290). The initial program of studies will be arranged in consultation with the graduate student's adviser. Consideration will be given to graduate work done elsewhere but formal transfer credit will be assigned only after the successful completion of the first year of study.	Qualifying Examinations.	During a student's residency until the time of his or her formal admission to candidacy, the specific planning, evaluation and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee composed of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study, the student will take an oral qualifying examination covering both general sociology and the areas of the student's special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.
Requirements for the M.A.	An M.A. may be granted after the successful completion of three semesters of course work and submission of two substantial research papers to be approved by the Department.	Admission to Candidacy.	A student shall be eligible for admission to candidacy for the Ph.D. upon fulfillment of the residence requirements, passing the departmental qualifying examination, and successful defense of a dissertation proposal. The work on the doctoral dissertation will be supervised by a Dissertation Committee.
Residence Requirements.	The minimum residence for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.	Dissertation and the Final Oral Examination.	The Ph.D. dissertation may be accepted by the Department upon the recommendation of the Dissertation Committee. To be granted the degree, the student is required to defend the dissertation in a public Final Oral Examination.
Language Requirements.	There is no foreign language requirement for the Ph.D. degree.		

Courses of Instruction

Sociology 101a. American Society	□ Not offered 1986-1987	Sociology 104aR. Sociology of Education	A study of educational institutions which examines pedagogy, educational structures and ideologies as they relate to social inequality in the broader society. This course examines the role of the institution of education as a force for social change versus the idea that education's function is to reinforce prevailing social conditions.
Sociology 102a. Social Psychiatry	Training in peer counseling is offered through classes, supervised sessions with other students, and community work. Theory, social contexts and practice of re-evaluation counseling is stressed. Other social psychiatric approaches are also covered. Permission of instructor required. Mr. Stein	Sociology 105a. Feminist Critique of Contemporary Social Institutions I	Ms. Barry □ Not offered 1986-1987 Study of the various issues addressed in feminist activism (i.e., family, childcare, reproductive rights, employment discrimination, social construction of sexuality and lesbian rights, sexual violence) as they form a critique of social and political institutions, analysis of the structural, ideological and psychological dimensions of sex oppression.
Sociology 102b. Social Psychiatry	□ Not offered 1986-1987	Sociology 105b. Feminist Critique of Contemporary Social Institutions II	□ Not offered 1986-1987
Sociology 103aR. The Sociology of Mental Illness and Health	□ Not offered 1986-1987 This course will concern itself with various sociological and psychological perspectives on the causes, nature of, and treatment for mental illness. We will also focus on the ways in which mental health is conceptualized as an internal state and an interpersonal process, and on the suggested means through which it might be achieved.	Sociology 106b. Sociology of Literature	□ Not offered 1986-1987
		Sociology 107a. Issues in Social Psychology	□ Not offered 1986-1987

Sociology 108bR. Critiques of Contemporary Society	<input type="checkbox"/> Not offered 1986-1987	Sociology 118a. American Jewish Life and Institutions	See NEJS 161a. Mr. Sklare
Sociology 109b. Black Intellectuals and the Crisis of the Twentieth Century	<input type="checkbox"/> Not offered 1986-1987 Considers major political writers and leaders in the United States, Africa and the Caribbean by passing in review the twentieth century as seen from the standpoint of their work. Includes Dubois, Carvey, Nkruman, King, Rodney and others.	Sociology 118b. The Sociology of the American Jewish Community	See NEJS 164b. Mr. Sklare
Sociology 110bR. Sociology of Knowledge	<input type="checkbox"/> Not offered 1986-1987 History and historical interpretation of the sociology of knowledge with particular emphasis on German and recent American literature.	Sociology 119a. Militarism: The Arms Race and American Society	The objective of the course is to increase comprehension of the consequences of militarism and the arms race for American society. Attention will be given to the post-World War II development of militarism and its relationship to American economic, political and social institutions including focus on issues of national security, nuclear proliferation and modern disarmament activity. Messrs. Fellman and Schwartz
Sociology 111a. Political Sociology	<input type="checkbox"/> Not offered 1986-1987	Sociology 119b. Social Change: The Nonviolent Movement	<input type="checkbox"/> Not offered 1986-1987
Sociology 112b. Social Class, Freedom and Equality	The concept of social class; its role in determining life changes, lifestyles, income, occupation and power; theories of class and inequality; selected social psychological aspects of social class and inequality; American class structure and dynamics; American social class and imperialism. Mr. Fellman	Sociology 120a. Sociology of Underdevelopment I	This course will examine selected aspects of the phenomenon of underdevelopment, paying particular attention to economic, political and social factors internal to Third World societies. Although the course will be informed throughout by general theorizing about underdevelopment and will include theoretical readings, it will emphasize the local consequences of large-scale processes. Topics include migration, rural organization, education and urban growth. Particular emphasis will be placed upon Latin America and the Caribbean. The course is designed with the undergraduate concentrator in one of the social sciences in mind. Ms. Alexander
Sociology 113b. Women and Work	<input type="checkbox"/> Not offered 1986-1987	Sociology 120b. The Sociology of Underdevelopment II	This course examines selected aspects of underdevelopment, paying particular attention to processes of change internal to Third World societies. Ms. Alexander
Sociology 114b. Society and Economy: Sociological Theories of Advanced Capitalism	A review of modern social theories about the production and reproduction of advanced capitalistic economies and social orders, focussing on the specification of and relationships between major social groups, productive organizations and the market in dynamic perspective. Organized around the social history of the contemporary period the course will discuss liberal-Keynesian, elite, social democratic, Marxist and Neo-Marxist, critical, and neo-liberal theories. Mr. Ross	Sociology 121bR. Sociology of Mass Communications	<input type="checkbox"/> Not offered 1986-1987 Through an examination of the history and development of contemporary media, including television, films, print media, etc., the course will explore the impact of mass culture on everyday life. We will consider questions of audience, politics and ideology, aesthetics, and the structure of the culture industry.
Sociology 116b. Comparative Ethnic Relations	The main purpose of this course is to explore and understand the origin and nature of racial and ethnic differences as they manifest themselves in different human societies. We will explore how theoreticians explain and account for that difference and how those who experience that difference define and use it as a basis to change the content of their daily lives. Our method of exploration will be comparative, historical and inter-disciplinary in perspective. Ms. Alexander	Sociology 122a. Sociology of Power	<input type="checkbox"/> Not offered 1986-1987
Sociology 117a. Work and Society	<input type="checkbox"/> Not offered 1986-1987		

Sociology 123b. The Crisis of the Welfare State	Cross-national comparisons of the extensiveness and impact of the welfare state will be used to concretize and illuminate larger theoretical questions about the compatibility between the competitive logic of market economies and the universalistic, egalitarian principle of democratic politics. To what extent can democratic pressures alter market outcome? Has the welfare state finally gone "too far," paralyzing the "invisible hand"?	Sociology 134a. Women and Intellectual Work	<p>□ Not offered 1986-1987</p> <p>This research seminar investigates the history of American women social scientists within the context of intellectual history, social structure, and gender relations. We will analyze the scholarly work of different generations of women thinkers, including their reflective writing. We will examine the reports of the American Sociological Association on the status of women. From this course students should gain an appreciation both of the history of women's intellectual effort as sociologists and the contrast and continuities with current work.</p>
Sociology 126a. Sociology of Deviance	□ Not offered 1986-1987		
Sociology 126b. Planned Communities	□ Not offered 1986-1987		
Sociology 128bR. Sociology of Religion: Sects, Cults and Societies	<p>□ Not offered 1986-1987</p> <p>Uses case studies to examine religious innovation in comparative perspective and in terms of its impact upon established religion, economic life, political organization and individual personality.</p>	Sociology 135a. Group Process	<p>Interpretation of interpersonal behavior and group development, based in part on observation of the group itself. Readings will include material from psychology and social anthropology as well as sociology.</p> <p>Permission of instructor required.</p> <p>Section 1: Mr. Schwartz Section 2: Ms. Reinharz</p>
Sociology 130a. The Family I	<p>□ Not offered 1986-1987</p> <p>This course presents a view of the family as a patriarchal institution and analyzes its relationship to other social institutions. Cross cultural analysis is employed to examine family forms, practice and ideas in terms of their impact on women. Critique of the family is approached through studying alternative life-styles and violence in the family.</p>	Sociology 135b. Group Process —Advanced	<p>□ Not offered 1986-1987</p> <p>A continuation of Sociology 135a.</p>
Sociology 131b. Women's Biography and Society	<p>Through the biographies of women intellectuals, scientists, political leaders and "ordinary" women, we will study women's subjective experiences and interactions as they are imbedded in objective conditions of society. The relationship of private and public life will be examined over the life course from birth to death. Biography will also be considered as a method of sociological inquiry.</p> <p>Ms. Barry</p>	Sociology 141a. Marx and Freud	<p>The course stresses Marxian and Freudian treatment of human nature, human potential, social stability, conflict, change, consciousness, social class and the relationship between family and social process. Topics of contemporary importance are reviewed in the light of both traditions. Attempts to combine the two approaches are examined.</p> <p>Mr. Fellman</p>
Sociology 132a. Urban Sociology: City Limits	<p>City limits are social, not geographical boundaries. What then defines them? The course will use case studies from New York, Boston, San Francisco, New Haven and Chicago to: 1) critically assess pluralist, elite and class theories of the distribution of urban political and economic resources, and 2) to explore the structure of neighborhoods as this limits capacities for political mobilization.</p> <p>Mr. Macy</p>	Sociology 141b. Advanced Seminar on Marx and Freud	□ Not offered 1986-1987
		Sociology 144b. Sociopsychological Dimensions of the Arms Race	<p>□ Not offered 1986-1987</p> <p>In this course we will read the literature in, discuss and critically evaluate, the sociopsychological theories, speculations, interpretations and conceptualizations that explain and try to understand the arms race.</p>
		Sociology 147a. The Sociology of Organizations and Occupations	□ Not offered 1986-1987
		Sociology 148aR. Social Psychology of Consciousness I	<p>Critical and practical examination of the concept of the individual both in itself and in social context. Social experiences are reexamined in terms of the qualities of mind which engender them. Traditional practices of meditation are reviewed in the forms of metaphor and parable in which they are presented.</p> <p>Messrs. Fisher and Stein</p>

Sociology 148b. Social Psychology of Consciousness II	<input type="checkbox"/> Not offered 1986-1987	Sociology 170bR. Industrial Sociology	An examination of the modern industrial production and its implications for the social order. Stress will be placed on the nature of the industrial labor process, the internal organization of industrial institutions (the industrial relations system, unionization, management strategies and practices, bureaucratic and white collar work), and the relationships of industry with the state and the international system.
Sociology 151b. Fieldwork in Social Settings: Environmental Research	<input type="checkbox"/> Not offered 1986-1987		Mr. Ross
Sociology 155b. Social Movements	<input type="checkbox"/> Not offered 1986-1987	Sociology 171a. Black and Third World Women	This course will examine the position of women of color within the context of certain political, economic, social and cultural transformations occurring in the Third World and the United States. Particular emphasis will be placed on women in the Caribbean and Latin America in order to gain a better understanding of both the similarities and peculiarities of their experiences compared to their North American counterparts. We will allow women of color to speak for themselves (through literature, films, etc.) at the same time that we analyze these more global transformations.
Sociology 160a. Social Conflict and Its Control	<input type="checkbox"/> Not offered 1986-1987		Ms. Alexander
Sociology 161a. Society, State and Power	This course will examine the ways in which power is exercised in different political regimes and social systems. The major focus of the course will be present-day advanced industrial societies, with particular consideration of the USA. Central topics will include the role of the state in society, the social forces which shape public policy, the control of social conflict. Contrasts will be drawn with Soviet-type societies.	Sociology 173b. Contemporary Social Problems	<input type="checkbox"/> Not offered 1986-1987
	Mr. Ross		We will deal with a selected group of social problems among which will be: a) the deterioration of the cities, b) the onslaught of information and misinformation, c) the trouble of consumerism, d) old age and social isolation. The aim of this course is to enable and encourage students to approach existing and proposed institutional arrangements critically.
Sociology 164a. Existential Sociology	This course is an introduction to existential thought and its relation to the discipline of sociology. Existential evaluation of selected theories on human nature and interaction, individual freedom and social ethics, the genesis and fate of the modern human group, types of authority, etc. Readings include works by Sartre, Durkheim, Goffman, Nietzsche, Kierkegaard, Mead and Merleau-Ponty.	Sociology 174b. Technology and Environment	Nature and human productive activities are looked at in terms of the ways they affect each other. Transformations of the landscape, the evolution of industrial technology, biological change, agriculture, and different kinds of environmental impact will be discussed. Farms, factories, forests, wilderness and cities are examined.
	Ms. Hayim		Mr. Fisher
Sociology 165a. Sociology of Birth and Death I	This course will explore the ways in which different societies shape the human experience of birth and death. It will focus on recent changes in the social settings and meanings of birth and death in advanced industrial societies. Topics to be covered include Eastern attitudes towards birth and death, the Holocaust and nuclear war, the social implications of medical technologies and the home birth and hospice movements.	Sociology 176b. Issues in Third World Development	<input type="checkbox"/> Not offered 1986-1987
	Mr. Stein		Sociology 177bR. Aging in Society
Sociology 165b. Sociology of Birth and Death II	<input type="checkbox"/> Not offered 1986-1987 A continuation of Sociology 165a.		This course explores the social aspects of aging and old age in our society. We examine the definition and treatment of age in various societies with an eye for understanding the contemporary Western response to age. We will explore the experience of aging in different settings in our society, and the survival strategies of old age. Fieldwork projects will be encouraged.
Sociology 167a. Comparative Social Structures: Advanced Capitalistic Societies	<input type="checkbox"/> Not offered 1986-1987		Ms. Reinharz

Sociology 178aR. Sociology of the Professions	An introduction to the professions in American society, from law and medicine to the public service, academic and business professions. Topics will include: the structure of careers and professional organizations, the schooling process, personal and family stress, bureaucratic work, relation to clients and government, alternative forms of professional work.	Sociology 190b. On the Caring of the Medical Care System	An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professions and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed.
Mr. Bittner		Ms. Alexander	
Sociology 179a. The Contemporary American Jewish Family	□ Not offered 1986-1987 See NEJS 35 for description.	Sociology 191a. Health, Community, and Society	An exploration into interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, and the place of social science in medicine.
Sociology 181a. Quantitative Methods of Social Inquiry	Sociology is possible because social life is structured and not random. Sociology is needed because the structures are often concealed. This course will introduce students to a variety of simple modeling techniques that may be useful for detecting such structured relationships. As such, it is not a statistics course (e.g., Math 36b) but a course on how to use quantitative tools to think sociologically, to facilitate empirically grounded social inquiry. Although the methods are quantitative, the emphasis is not on their mathematical derivation but on conceptual understanding and hands on (user-friendly) application. No statistical background is presumed.	Sociology 192b. Sociology of Disability	In the latter half of the twentieth century, disability has emerged as an important social-political-economic-medical issue. It has, however, a distinct history characterized by one writer as a shift from "good will to civil rights." We will trace that history and the way people with disability are seen and unseen, and see themselves. Particular attention will be placed in understanding the self-care/self-help movement. Students will be expected to carry out a field work project.
Mr. Macy		Mr. Zola	
Sociology 182b. World Population	□ Not offered 1986-1987	Sociology 196bR. Seminar: Writing and the Social Sciences	See Psychology 180bR. Mr. Rubin in collaboration with Mr. Zola
Sociology 185a. Research Methods and Statistics I	See Social Welfare 4.01. Mr. Kurtz	Sociology 200a. Classical Sociological Theory	Critical readings of the sociologies of Marx, Weber and Durkheim. Mr. Bittner
Sociology 185b. Research Methods and Statistics II	See Social Welfare 4.02. Mr. Kurtz	Sociology 200b. Contemporary Social Thought	□ Not offered 1986-1987 Examination of American and European social thought; system and conflict theory, symbolic interactionism, ethnomethodology and phenomenological sociology and critical theory.
Sociology 186a. Statistics Laboratory	See Social Welfare 4.01a. Staff	Sociology 202a. Quantitative Research Methods	This research seminar is designed to involve students in survey and archival data collection and analysis. Technical training will be coupled with explorations of methodological issues centering on the integration of theory and empirical research. Through hands-on assignments, students will learn to use a variety of modeling techniques and associated computer software. Although the methods are quantitative, the emphasis is not on their mathematical derivation but on conceptual understanding and hands-on (user friendly) application. No statistical background is presumed.
Sociology 186b. Statistics Laboratory	See Social Welfare 4.02a. Staff	Mr. Macy	
Sociology 188b. Sociology of Law	The legal order considered in a framework of cross-cultural and historical comparison. The role of the instruments of the law and of the administration of justice in contemporary society. Mr. Bittner		
Sociology 189bR. Introduction to the History of Legal Thought	□ Not offered 1986-1987		

Sociology 203a. Field Methods	□ Not offered 1986-1987	Sociology 214a. Topics in Social Psychology: Freud and the Freudian Tradition	□ Not offered 1986-1987
Sociology 203b. Field Methods	The methodology of sociological field research in the qualitative research tradition. Readings will include theoretical statements as well as experiential accounts of researchers in the field. The course will include specific methods and procedures of data collection (participant observation, interviewing, collaborative research, systematic observation, oral history) and data analysis. Ms. Reinharz	Sociology 215a. The Sociology of State Action	□ Not offered 1986-1987 An examination of theories and concepts which have been advanced to explain the dynamics of state action in different social and economic contexts, notably in such advanced capitalistic societies as the USA and in Soviet-type societies, notably in the USSR. Recent discussions of the degree to which the state acts independently of social and economic forces in society will be considered, as will concrete cases of state action.
Sociology 204a. Sociology and History	□ Not offered 1986-1987	Sociology 216b. The Frankfurt School and Critical Theory	The course analyzes the foundations of critical theory and evaluates its reformation of the concepts and prospects of social change. Readings include Hegel, Gramsci, Lukacs, Marcuse, Habermas, Offe and Sartre. Ms. Hayim
Sociology 205a. Sexual Stratification: Historical and Comparative Perspectives	□ Not offered 1986-1987	Sociology 217a. Problems and Issues in the Sociology of Health and Illness	□ Not offered 1986-1987 The aim of this course is to offer a socio-cultural-historical-political perspective on the study of problems of health and illness. We will accomplish this by examining some of the basic assumptions underlying the way we conceive of and study issues in health care. The written assignments include a health diary, a text analysis, and a book review.
Sociology 206b. The Family	□ Not offered 1986-1987 This seminar will study various perspectives in family sociology: structural functionalism, sociology, interpretative-interaction, Marxist, feminist. We will examine and critique cross-cultural family research and contemporary approaches to black and other minority group family life. Family dynamics including decision making, domestic labor, reproduction, sexuality, violence, will be studied.	Sociology 218a. Advanced Topics in Social Theory and Methods: Surrender and Catch — Experience and Inquiry Today	“Surrender” is the most immediate contact with a topic being studied or a situation or individual being encountered; “catch” is its outcome. In this seminar we will explore the relation between the idea of surrender-and-catch and the crisis of mankind from which it springs and trace affinities with other recent currents in the social sciences and philosophy. Mr. Wolff
Sociology 207aR. Feminist Theory	□ Not offered 1986-1987 A comprehensive study of various approaches to feminist theory through an examination of ideas and writings which frame the theoretical debates in feminism today, particularly between radical feminists and socialist feminists. This course examines the relationship between theory and practice in terms of feminist activism and devotes particular attention to the intersections of race and class with sex oppression.	Sociology 218b. Advanced Topics in Social Theory and Methods: Surrender and Catch — Experience and Inquiry Today	□ Not offered 1986-1987
Sociology 208a. Seminar in the Sociology of Organization: The Industrial Labor Process	□ Not offered 1986-1987	Sociology 219a. Social Systems and Political Forms: Social Conflict and its Management	□ Not offered 1986-1987
Sociology 209bR. Class and Politics	□ Not offered 1986-1987	Sociology 219b. Advanced Topics in Political Sociology	□ Not offered 1986-1987
Sociology 210aR. The Sociology of Development and Underdevelopment	□ Not offered 1986-1987	Sociology 220b. Seminar on the Sociology of Politics	□ Not offered 1986-1987
Sociology 211a. Research on Women and Society	□ Not offered 1986-1987		

Sociology 221aR. Advanced Topics in Sociological Theory: Sociology of Religion	French social theory since 1945 will be reviewed in the context of French social history and the sociology of intellectuals. Reading will include Existentials-Marxists (Sartre, Merleau-Ponty), Structuralists (Levi-Strauss, Althusser, Poulantzas), Liberals (Aron, Crozier, Boudon and others), and post-1968 figures such as Michel Foucault, Alain Touraine and Pierre Bourdieu. Mr. Ross	Sociology 230-256. Readings in Sociological Literature	230a and b. Mr. Bittner 233a and b. Mr. Fellman 234a and b. Mr. Fisher 238a and b. Mr. Ross 239a and b. Mr. Schwartz 240a and b. Mr. Stein 242a and b. Mr. Wolff	243a and b. Mr. Zola 245a and b. Mr. Conrad 246a and b. Ms. Hayim 247b. Ms. Barry 249a and b. Ms. Reinharz 253a and b. Ms. Alexander 256a and b. Mr. Macy
Sociology 221b. Topics in the Sociology of Religion	□ Not offered 1986-1987			
Sociology 225a. Deviance: Theories and Research	□ Not offered 1986-1987			
Sociology 226aR. Theories in Social Psychology	An examination of some major theorists of self and society, social interaction and interpersonal relations. Theorists considered will include Cooley, Mead, Sullivan, Goffman and Buber. Mr. Schwartz	Sociology 290a. Pro-Seminar	A seminar meeting once a week in which faculty members introduce their interests and research. Required of all first year graduate students. Messrs. Bittner and Fellman	
Sociology 227b. Group Process Seminar	□ Not offered 1986-1987			
Sociology 228a. Themes in Sociological Theory — Phenomenology and Sociology: Alfred Schutz	□ Not offered 1986-1987	Sociology 401-423. Dissertation Research	Independent research for the Ph.D. degree. 401. Mr. Bittner 415. Mr. Zola 404. Mr. Fellman 417. Ms. Fields 405. Mr. Fisher 418. Ms. Hayim 410. Mr. Ross 419. Ms. Barry 411. Mr. Schwartz 420. Ms. Reinharz 412. Mr. Stein 423. Mr. Conrad 414. Mr. Wolff	
Sociology 228b. Themes in Sociological Theory	□ Not offered 1986-1987			

Spanish

See Joint Program of Literary Studies.

Theater Arts

Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate — to develop skilled craftsmen of knowledge and judgment about the arts.

Professionally oriented training is offered in three theatrical disciplines: **Acting** (including an Acting/Directing option), **Design/Technical**, and **Dramatic Writing**.

The production program provides extensive practical experience for all students on and behind the stages of the three Spingold theaters, where the actors act, the designers design and construct, and the playwrights have the opportunity to see their accepted plays produced.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Please note, the GRE is not required for Theater Arts admission. Students apply for admission to one of the three disciplines and, in addition to the standard application procedures, Acting applicants are seen in an audition/interview. Design/Technical applicants attend an interview with portfolio evaluation, and Dramatic Writing applicants submit one or more original play-scripts for evaluation.

Acting and Design/Technical auditions/evaluations are held at Brandeis. Information about these auditions/evaluations will be furnished by the department **after** applications have been received; and materials from Dramatic Writing applicants will be reviewed **after** applications have been received.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by March 1 for the following year.

Faculty

Adjunct Professor
Michael Murray:
Director of the
Theater Arts Program;
Directing.

Visiting Professor
Nola Chilton:
Acting.

Professor
James H. Clay:
Directing. Theater
history.

Adjunct Professor
Karl Eigsti:
Scenic design.

Professor
Martin Halpern:
Playwriting and
dramatic literature.

Professor
**Theodore L.
Kazanoff:**
Acting and directing.

Visiting Professor
Jonathan Levy:
Dramatic writing.

Professor
Charles W. Moore:
Acting and directing.

Visiting Professor
Patricia Zippodt:
Costume design.

Associate Professor
Robert O. Moody:
Scene painting.

Associate Professor
**Maureen Heneghan
Tripp:**
Costume design.

Assistant Professor
Donna B. Aronson:
Voice and speech.

Lecturer with the
rank of Professor
John Bush Jones:
Dramatic theory,
literature and
criticism.

Lecturer with the
rank of Associate
Professor
David Wheeler:
Directing.

Lecturer
William Anderson:
Lighting design.

Lecturer
Alexander N. Davis:
Voice and speech.

Lecturer
Bronia Wheeler:
Acting.

Lecturer
Flicka Wilmore:
Singing.

Lecturer
Robin Wiseman:
Costume rendering.

Artist-in-Residence
Daniel Gidron:
Acting and directing.

Artist-in-Residence
Barbara A. Harris:
Stage management.

Artist-in-Residence
William J. Jacobson:
Set design.

Artist-in-Residence
Theodore Janello:
Technical direction.

Artist-in-Residence
Denise Loewenguth:
Costuming.

Artist-in-Residence
Annie Loui:
Movement.

Degree Requirements

Master of Fine Arts

Residence Requirements.

Acting: two years. Acting with Certification: three years. Design/Technical: three years. Dramatic Writing: two years. Dramatic Writing with Certification: three years.

Actors normally earn the M.F.A. degree in two years. A third-year program for actors, and an acting/directing option available to selected third-year actors, is by invitation from the faculty. Playwrights also normally earn the M.F.A. in two years. A third-year program for playwrights is offered to, at most, one playwright annually on invitation from the faculty. Students may elect to accept the invitation for a third year of study, or may decline and have the two-year M.F.A. conferred. Candidates who complete the third year are granted the M.F.A. with Certification.

Programs of Study

Acting

The acting faculty provides close supervision of class and performance work for first-year actors; second- and third-year actors are the core of the acting company for mainstage and other production activities. The third year for actors may include an internship at a major theater company for one production during the academic year.

The Acting/Directing Option exists for those actors who wish a program where directing is explored with minimal technical elements. These students receive a combination of acting and directing assignments in the third year.

All actors (with the exception of first year in the first half of the first term, who are barred from performance work) are required to audition for and play as cast in all major productions, unless excused by the chairman after consultation with the director.

Actors are required to serve on a crew for one major production each year (about sixty hours); normally this crew may not be for a play in which the student is also performing. There is no crew requirement for third-year students in the Acting/Directing Option, but stage managing is recommended. Students are expected to help on crew whenever they have time, regardless of formal credit.

Courses of Instruction

Required Courses First Year:

Theater Arts 201.
Seminar in Dramatic
Theory, Method,
Literature

Mr. Jones

Theater Arts 203.
Advanced Acting
Studies: I

Messrs. Kazanoff and Gidron, Ms. Chilton

Theater Arts 205.
Speech I

Mr. Davis

Theater Arts 207.
Movement for the
Actor: I

Includes regular fencing classes.
Ms. Loui

Theater Arts 209.
Voice/Speech
Studies for the
Actor: I

Includes regular classes in singing and
Alexander Technique.
Ms. Aronson

Theater Arts 225.
Production
Laboratory: I

Mr. Janello

Theater Arts 233.
Singing I

Group Tutorial.
Ms. Wilmore

Required Courses Second Year:

Theater Arts 204.
Advanced Acting
Studies: II

Continuing work in exploration of process
which integrates self and text through study of
Laban, Chekov and techniques which help
actor objectify emotion. Scoring now includes
through-line and overall objective. Scenes from
all of dramatic literature.

Messrs. Kazanoff and Gidron, Ms. Chilton

Theater Arts 208.
Movement for the
Actor: II

Includes regular classes in fencing when
available.
Ms. Loui

Theater Arts 210.
Voice/Speech
Studies for the
Actor: II

Includes regular classes in singing and
Alexander Technique.
Ms. Aronson and Mr. Davis

Theater Arts 213.
Directing

Mr. Wheeler

Theater Arts 226.
Production
Laboratory: II

Mr. Janello

Theater Arts 234.
Singing II

Group tutorial.
Ms. Wilmore

Those students interested in the Acting/Directing Option who receive faculty approval will also take:

Theater Arts 190a. ☐ Not offered 1986-1987
A Study of Acting Theory and Method as They Relate to 20th Century Theater

Theater Arts 190b. Not offered 1986-1987
A Study of Directing Theory and Method as They Relate to 20th Century Theater

Required Courses Third Year:

Theater Arts 301. Includes a weekly scene workshop.
Advanced Acting Studies: III Mr. Kazanoff and Staff

Theater Arts 302. Tutorial.
Movement for the Actor: III Ms. Loui

Theater Arts 303. Includes regular classes in singing and Alexander Technique.
Voice/Speech Studies for the Actor: III Ms. Aronson and Mr. Davis

Theater Arts 304. Rehearsal and Performance
 Mr. Kazanoff

Theater Arts 325. Production Laboratory: III
 Staff

Theater Arts 334. Ms. Wilmore
Singing III

Those students taking the Acting/Directing Option will take theater Arts 301 and 304 and either 302 or 303. In addition, they will take:

Theater Arts 202. Seminar in Dramatic Structure
 Mr. Jones

Students enrolled in the Acting/Directing Option may, with the permission of the instructor, also take:

Theater Arts 180a and b. Production Concepts
 Mr. Clay

Design-Technical

All major productions are designed by graduate students. Therefore, a student may be expected to be involved in a design capacity on at least three productions during each year. In addition, students will participate on various production crews as arranged in consultation with the faculty.

The graduate design thesis (Theater Arts 310b) is the final project in the Design/Technical program.

Required Courses First Year:

Theater Arts 201. Seminar in Dramatic Theory, Method, Literature
 Mr. Jones

Theater Arts 211. Scenic Design: I
 Mr. Eigsti and Ms. Taylor

Theater Arts 214. Laboratory fee to be arranged.
Costume Pattern Drafting Ms. Loewenguth

Theater Arts 217. Costume Design
 Staff

Theater Arts 219. Laboratory fee to be arranged.
Lighting Design and Mechanics I Mr. Anderson

Theater Arts 221. Costume Studies, Basic Drawing and Perspective Drawing
 Mr. Wiseman

Theater Arts 222. Laboratory fee to be arranged.
Drafting Mr. Janello

Theater Arts 225. Production Laboratory: I
 Mr. Janello and Staff

Theater Arts 230. Laboratory fee determined by enrollment.
Life Drawing: I Mr. Moody

Theater Arts 237. Design Production I
 Design Faculty

Required Courses Second Year:

Theater Arts 212. Scenic Design: II
 Mr. Eigsti

Theater Arts 218. Costume Design: II	Staff
Theater Arts 220. Lighting Design: II	Laboratory fee to be arranged. Mr. Anderson
Theater Arts 223. Scene Painting I	Mr. Moody
Theater Arts 224. Stage Mechanics	Laboratory fee to be arranged. Mr. Janello
Theater Arts 226. Production Laboratory: II	Mr. Janello
Theater Arts 227. Sketching and Rendering: I Section A:	Costume Rendering Ms. Newhall
Section B:	Set Rendering Mr. Moody
Theater Arts 228. Scenic Crafts	Laboratory fee to be arranged. Mr. Moody
Theater Arts 232. Costume Construction	Ms. Loewenguth
Theater Arts 235. History of Costume and Decorative Arts	Ms. Tripp
Theater Arts 238. Design Production II	Design Faculty
Required Courses Third Year:	
Theater Arts 239. Design Production III	Design Faculty
Theater Arts 242. Scenic Design III	Mr. Eigsti
Theater Arts 243. Costume Design III	Staff

Theater Arts 244. Costume Rendering II	Ms. Newhall
Theater Arts 245. Draping/ Costume Crafts	Ms. Loewenguth
Theater Arts 246. Lighting Design III	Mr. Anderson
Theater Arts 310b. Thesis Projects	The graduate design thesis is a full-scale project which grows out of the periodic portfolio reviews. It may be either a realized or nonrealized project. Design Faculty
Theater Arts 325. Production Laboratory III	Mr. Janello
Dramatic Writing	Dramatic writing students are required to serve on two crews each year (about 120 hours). They are also required to participate in the preparation of any studio, workshop or major production of their plays mounted during the time they are in residence, and this counts as one crew. In rare instances, acting in a major production may count as one crew.

Required Courses First Year:

Theater Arts 201. Seminar in Dramatic Theory, Method, Literature	Mr. Jones
Theater Arts 215. Workshop in Dramatic Writing: I	A double-credit course. Mr. Levy, Fall Term Mr. Halpern, Spring Term

Theater Arts 225. Production Laboratory: I	Mr. Janello and Staff
In addition, one elective course in the first term.	

Required Courses Second Year:

Theater Arts 202. Seminar in Dramatic Structure	Mr. Jones
Theater Arts 216. Workshop in Dramatic Writing: II	A double-credit course. Mr. Levy, Fall Term Mr. Halpern, Spring Term

Theater Arts 226.**Production****Laboratory: II**

Mr. Janello and Staff

Theater Arts 315.**Workshop in****Dramatic Writing:****III**

A double-credit course.

Mr. Levy, Fall Term

Mr. Halpern, Spring Term

Theater Arts 310b.**Thesis Projects**

Mr. Halpern

Theater Arts 325.**Production****Laboratory: III**

Mr. Janello and Staff

In addition, one elective course in the first term.

In addition, one elective course in the first term.

Required Courses Third Year:

Theater Arts 300.**Independent Study**

Staff

University Organization

Board of Trustees

Under Massachusetts law, the 50-member Board of Trustees is the governing body of the University. There are also four faculty representatives and three student representatives to the board who participate in Board meetings and have votes on the several committees. The chairman of the Fellows, the president of the National Women's Committee, and the president of the Alumni Association serve *ex-officio*. Alumni elect annually an Alumni Term Trustee who serves as full voting trustee for a five-year term.

The President

The President, the chief executive officer of the University, is appointed by the Board of Trustees and is responsible for all university activities.

Chancellor Emeritus

Chancellor Emeritus of the University is an honorary title held by Brandeis' Founding President Abram L. Sachar, whose 20 years of experience is now utilized for the welfare of the University.

University Fellows

University Fellows comprise about 400 national leaders from a broad base of business, educational and public life who lend counsel, expertise and support to university development and planning programs.

The President's Council

President's Councilors are leading men and women throughout the country whose skills and experience are placed at the disposal of the Brandeis president in areas of their special competence.

The Provost and Deans

The Provost and Dean of the Faculty, the chief academic officer of the University, supervises academic policy, undergraduate and graduate curricula, the faculty and its departments of instruction.

The Dean of the College of Arts and Sciences assumes responsibility for many areas affecting the academic lives of undergraduates, including curriculum development, advisory services and the academic progress of students.

The Dean of the Graduate School of Arts and Sciences oversees the individualized programs of study for scholars, scientists and artists in 20 disciplines.

The Dean of the Florence Heller School for Advanced Studies in Social Welfare oversees the academic activities of the University's first and only professional school and its work in such areas as health, aging, income and employment, and minorities.

The Dean of Student Affairs is responsible for many areas of student life, including student activities, residence life, career planning and placement, health service, and athletics.

The Faculty Senate

The Faculty Senate, the elected representative body of the faculty, discusses such issues as academic freedom and responsibility, university policy, appointments, tenure, dismissal and salaries.

The Vice Presidents

The Executive Vice President for Finance and Administration oversees Brandeis' complete financial and administrative support operations. The major responsibilities include budgeting and planning, capital programs, endowment and investment management, library services, computer services, telecommunications, plant operations, employee relations, security, materials management, and community and governmental relations. The Executive Vice President also serves as principal liaison with the Budget and Finance, Investment and Facilities committees of the Board of Trustees.

The Senior Vice President for Development and Alumni Relations is responsible for directing the institutional relations of the University related to fundraising and alumni.

The Vice President for Communications and Public Relations is responsible for the University's communications, including such publications as the *Brandeis Review*, the *Brandeis Reporter*, newsletters, and brochures, and external relations, including media relations. She also serves as the University's principal legislative and federal relations officer and provides liaison with certain national organizations.

The Vice President for Alumni Relations is responsible for directing and coordinating programs and publications for all Brandeis alumni, the National Alumni Association, regional alumni chapters and the Alumni Fund.

National Women's Committee

The National Women's Committee, now an organization of more than 65,000 members, has been a partner with the University since 1948. This volunteer organization gives its membership a wide range of educational offerings. These include unique study group programs with syllabi provided by Brandeis faculty; adult education seminars in local communities called "University on Wheels;" and special lectures by university speakers. The 126 chapters across the country are embassies of good will for the University. The central commitment of the Women's Committee, however, is to the Brandeis University libraries. Since it was founded by eight members in Boston, it has contributed nearly 27 million dollars in support of the libraries.

Board of Trustees

The Graduate Council

The members of the Graduate Council of the Graduate School of Arts and Sciences are appointed annually by the President of the University. Members of the Graduate Council for 1986-87 are:

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Charles Cutter Lecturer in Near Eastern and Judaic Studies <i>Ph.D., Ohio State University</i>	Stephen Dobyns Fannie Hurst Visiting Poet <i>M.F.A., University of Iowa</i>	Robert Evans Jr. Atran Professor of Labor Economics <i>Ph.D., University of Chicago</i>	Marvin Fox Philip W. Lown Professor of Jewish Philosophy and Director, Lown School <i>Ph.D., University of Chicago</i>	Ira M. Gessel Associate Professor of Mathematics and Computer Science <i>Ph.D., Massachusetts Institute of Technology</i>	Marcus T. Grisaru Professor of Physics <i>Ph.D., Princeton University</i>
Johanna Damgaard-Liander Lecturer in Spanish <i>M.A., Harvard University</i>	F. Trenery Dolbear Jr. Clinton S. Darling Professor of Economics <i>Ph.D., Yale University</i>	Gerald D. Fasman Louis and Bessie Rosenfield Professor of Biochemistry <i>Ph.D., California Institute of Technology</i>	Bruce M. Foxman** Professor of Chemistry <i>Ph.D., Massachusetts Institute of Technology</i>	Martin Gibbs Abraham S. and Gertrude Burg Professor in Life Sciences <i>Ph.D., University of Illinois</i>	Eugene P. Cross Edward and Gertrude Swartz Professor of Theoretical Physics <i>Ph.D., Princeton University</i>
Denise Dallamora Lecturer in Physical Education <i>B.S., Northeastern University</i>	Evsey D. Domar Visiting Professor of Economics <i>Ph.D., Harvard University</i>	Gordon A. Fellman Associate Professor of Sociology <i>Ph.D., Harvard University</i>	Gregory L. Freeze*** Professor of History <i>Ph.D., Columbia University</i>	Daniel Gidron Artist-in-Residence (Theater Arts) <i>M.F.A., Brandeis University</i>	Allen R. Crossman Paul E. Prosswimmer Professor of Poetry and General Education <i>Ph.D., Brandeis University '60</i>
Lorraine J. Daston Dibner Associate Professor in the History of Science <i>Ph.D., Harvard University</i>	Emily P. Dudek Adjunct Associate Professor of Chemistry <i>Ph.D., Radcliffe College</i>	Henry Felt Lecturer in American Studies <i>B.A., Goddard College</i>	Eberhard Frey Associate Professor of German <i>Ph.D., Cornell University</i>	Michael T. Gilmore Professor of English <i>Ph.D., Harvard University</i>	Ernest Grunwald Henry F. Fischbach Professor of Chemistry <i>Ph.D., University of California, Los Angeles</i>
Alexander N. Davis Lecturer in Voice and Speech <i>M.A., The University of Akron</i>	James E. Duffy Professor of African & Afro-American Studies <i>Ph.D., Harvard University</i>	Karen E. Fields*** Associate Professor of Sociology <i>Ph.D., Brandeis University '77</i>	Sylvia Fuks Fried Lecturer in Yiddish <i>B.A., The Hebrew University (on the Jacob D. Berg Fund)</i>	Jack S. Goldstein Professor of Astrophysics <i>Ph.D., Cornell University</i>	James E. Haber Professor of Biology and Rosensiel Basic Medical Sciences Research Center <i>Ph.D., University of California, Berkeley</i>
Beth Davis Lecturer in Education <i>M.Ed., Boston College</i>	Karl Eigtö Adjunct Professor of Scenic Design (Theater Arts) <i>M.A., University of Bristol</i>	David Hackett Fischer Earl Warren Professor of History <i>Ph.D., The Johns Hopkins University</i>	Linda S. Frisch Lecturer with rank of Assistant Professor of Germanic Language and Literature <i>M.A., University of California, Santa Barbara</i>	Ruth Gollan Lecturer with rank of Assistant Professor of Near Eastern and Judaic Studies and Director, Hebrew Language Program <i>Ph.D., Boston College</i>	On leave Fall Term 1986-1987* On leave Spring Term 1986-1987** On leave 1986-1987***
Lemard Davis Assistant Professor of English & American Literature <i>Ph.D., Columbin University</i>	David Eisenbud*** Professor of Mathematics <i>Ph.D., University of Chicago</i>	Michael Fishbane Samuel Lane Professor of Jewish Religious History and Social Ethics <i>Ph.D., Brandeis University '71</i>	Charles S. Fisher* Associate Professor of Sociology <i>Ph.D., University of California, Berkeley</i>	D. Neil Gomberg Assistant Professor of Anthropology <i>Ph.D., University of Massachusetts, Amherst</i>	
Corrado DeConcini Visiting Professor of Mathematics <i>Ph.D., Warwick University (University of Rome)</i>					

Luc Haine Lecturer in Mathematics <i>Ph.D., University of Belgium</i>	James B. Hendrickson* Professor of Chemistry <i>Ph.D., Harvard University</i>	Robert C. Hunt Associate Professor of Anthropology <i>Ph.D., Northwestern University</i>	Gary H. Jefferson Assistant Professor of Economics <i>Ph.D., Yale University</i>	Tamar Katz-Moshaiov Lecturer in Hebrew <i>B.A., Tel Aviv University</i>	Jee Heub Koh Lecturer in Mathematics <i>Ph.D., University of Michigan</i>
Jane Hale Assistant Professor of French & Comparative Literature <i>Ph.D., Stanford University</i>	Maurice Hershenson George and Frances Levin Associate Professor of Psychology <i>Ph.D., Yale University</i>	Hugh E. Huxley* Professor of Biology and Rosentiel Basic Medical Sciences Research Center <i>D.Sc., Cambridge University</i>	William P. Jencks Gyula and Katika Tauber Professor of Biochemistry and Molecular Pharmacodynamics <i>M.D., Harvard University</i>	Theodore L. Kazanoff** Blanche, Barbara and Irving Laurie Professor of Theater Arts <i>M.A., Smith College</i>	Ann O. Koloski-Ostrow Lecturer in Classics <i>M.A., University of Michigan</i>
Jeffrey C. Hall Professor of Biology <i>Ph.D., University of Wisconsin</i>	Judith Herzfeld Associate Professor of Biophysical Chemistry <i>Ph.D., Massachusetts Institute of Technology</i>	Andrei Iacob Joseph & Esther Foster Visiting Assistant Professor <i>Ph.D., Weizmann Institute</i>	Erie Jensen Assistant Professor of Physics <i>Ph.D., Cornell University</i>	Philip M. Keehn Professor of Chemistry <i>Ph.D., Yale University</i>	Kenneth Kustin Professor of Chemistry <i>Ph.D., University of Minnesota</i>
Martin Halpern* Samuel and Sylvia Schulman Professor of Theater Arts <i>Ph.D., Harvard University</i>	Christine L. Heyrman Associate Professor of History <i>Ph.D., Yale University</i>	Kiyoshi Igusa Associate Professor of Mathematics <i>Ph.D., Princeton University</i>	Leon A. Jick Helen and Irving Schneider Professor of American Jewish Studies <i>Ph.D., Columbia University</i>	Allan R. Keiler Professor of Music <i>Ph.D., Harvard University</i>	Margie Lachman Assistant Professor of Psychology <i>Ph.D., Pennsylvania State University</i>
Harlyn O. Halvorson Professor of Biology and Director, Rosentiel Basic Medical Sciences Research Center <i>Ph.D., University of Illinois</i>	Timothy J. Hickey Instructor in Computer Science <i>M.S., University of Chicago</i>	Robert Indik Assistant Professor of Mathematics <i>Ph.D., Princeton University</i>	William A. Johnston Albert V. Danielsen Professor of Philosophy and Christian Thought <i>Ph.D., Columbia University</i>	Alice A. Kelikian Assistant Professor of History <i>D. Phil., Oxford University</i>	Robert V. Lange*** Associate Professor of Physics <i>Ph.D., Harvard University</i>
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Michael Harris Associate Professor of Mathematics <i>Ph.D., Harvard University</i>	Eli Hirsch Associate Professor of Philosophy and History of Ideas <i>Ph.D., New York University</i>	Alfred L. Ivry Walter Stern Hilborn Professor of Near Eastern and Judaic Studies <i>D. Phil., Oxford University</i>	John Bush Jones Lecturer with rank of Professor of Theater Arts <i>Ph.D., Northwestern University</i>	Reuven R. Kimelman Associate Professor of Near Eastern and Judaic Studies <i>Ph.D., Yale University</i>	Kevin S. Larsen Assistant Professor of Spanish and Comparative Literature <i>Ph.D., Harvard University</i>
Erica Harth Professor of French and Comparative Literature <i>Ph.D., Columbia University</i>	James Hollifield Assistant Professor of Politics <i>Ph.D., Duke University</i>	Ray S. Jackendoff*** Professor of Linguistics <i>Ph.D., Massachusetts Institute of Technology</i>	Peter C. Jordan*** Professor of Chemistry <i>Ph.D., Yale University</i>	Charles Kindleberger Sachar Professor of Economics <i>Ph.D., Columbia University</i>	Martin A. Levin Professor of Politics <i>Ph.D., Harvard University</i>
Sara Hascal Lecturer in Hebrew	Thomas C. Hollocher Jr. Professor of Biochemistry <i>Ph.D., University of Rochester</i>	David Jacobson Associate Professor of Anthropology <i>Ph.D., University of Rochester</i>	William Kapelle* Associate Professor of History <i>Ph.D., University of Massachusetts</i>	Marcel Kinsbourne Adjunct Professor of Psychology <i>D.M., Oxford University</i>	Harold I. Levine Professor of Mathematics <i>Ph.D., University of Chicago</i>
K. C. Hayes Professor of Biology and Director, Foster Biomedical Research Laboratories <i>Ph.D., University of Connecticut</i>	David M. Hoose Lecturer with rank of Assistant Professor of Music <i>B.M., Oberlin College Conservatory of Music</i>	Pierre-Yves Jacopin Assistant Professor of Anthropology <i>Ph.D., University of Neuchâtel</i>	Edward K. Kaplan Associate Professor of French <i>Ph.D., Columbia University</i>	Lawrence E. Kirsch Professor of Physics <i>Ph.D., Rutgers University</i>	Jerome P. Levine Professor of Mathematics <i>Ph.D., Princeton University</i>
Gila J. Hayim Associate Professor of Sociology <i>Ph.D., University of Pennsylvania</i>	Emil Horozov Lecturer in Mathematics <i>M.A., Sofia University</i>	Theodore Janello Artist-in-Residence (Theater Arts) <i>M.A., University of Connecticut</i>	Kathleen M. Karrer** Assistant Professor of Biology <i>Ph.D., Yale University</i>	Karen Wilk Klein Associate Professor of English <i>Ph.D., Columbia University</i>	Lawrence Levine Professor of Biochemistry (American Cancer Society Professorship) <i>Sc.D., The Johns Hopkins University</i>
Peter Heller Professor of Physics <i>Ph.D., Harvard University</i>	Judith A. Houde Assistant Professor of Physical Education <i>M.S. Ed., University of Tennessee</i>	Anne F. Janowitz Assistant Professor of English and American Literature and Dana Faculty Fellow <i>Ph.D., Stanford University</i>	Aaron L. Katchen Assistant Professor of Near Eastern and Judaic Studies <i>Ph.D., Harvard University</i>	John L. Klock Lecturer in Economics <i>B.A., University of California, San Diego</i>	On leave Fall Term 1986-1987*
Michael J. Henchman Professor of Chemistry <i>Ph.D., Yale University</i>	Elisabeth Howe Lecturer in French <i>M.A., Harvard University</i>			James Kloppenberg Assistant Professor of History <i>Ph.D., Stanford University</i>	On leave Spring Term 1986-1987**
	Mark L. Hulliung Professor of Politics <i>Ph.D., Harvard University</i>			Raymond Knight** Professor of Psychology <i>Ph.D., University of Minnesota</i>	On leave 1986-1987***

- Norman E. Levine**
Associate Professor of
Physical Education
B.S., Bates College
- Alan Levitan**
Associate Professor of
English
*Ph.D., Princeton
University*
- Irwin B. Levitan**
Professor of
Biochemistry
Ph.D., McGill University
- Avigdor Levy**
Associate Professor of
Near Eastern and Judaic
Studies
*Ph.D., Harvard
University*
- Jonathan Levy**
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*Ph.D., Columbia
University (State
University of New York,
Stony Brook)*
- Arthur Lewbel**
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Faculty Fellow
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Institute of Technology*
- Susan Lichtman**
Assistant Professor of
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M.F.A., Yale University
- Henry Linschitz**
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Ph.D., Duke University
- John E. Lisman**
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Biology
*Ph.D., Massachusetts
Institute of Technology*
- Elaine P. Loeffler**
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B.A., Smith College
- Denise Loewenguth**
Artist-in-Residence
(Theater Arts)
- Annie Loui**
Artist-in-Residence
(Theater Arts)
- John M. Lowenstein**
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Professor of
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Ph.D., London University
- Susan Lowey**
Professor of
Biochemistry and
Rosenthal Basic Medical
Sciences Research Center
Ph.D., Yale University
- Catherine Lugar**
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New York, Stony Brook*
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Ph.D., Yale University
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Lawrence A. Wien
Professor of International
Cooperation
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University*
- Michael Macy**
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*Ph.D., Harvard
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- Joan M. Maling****
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*Ph.D., Massachusetts
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- David Marc**
Assistant Professor of
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(American Studies)
Ph.D., University of Iowa
- Eve E. Marder**
Associate Professor of
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*Ph.D., University of
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- Peter Markman**
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*M.F.A., Southern Illinois
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- Robert L. Marshall***
Louis, Frances and
Jeffrey Sachar Professor
of Music
*Ph.D., Princeton
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- Danielle Marx-Scouras**
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- Teruhisa Matsusaka**
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Mathematics
Dr.Sc., Kyoto University
- Alan L. Mayer**
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*Ph.D., Princeton
University*
- Leslie Ann McArthur**
Professor of Psychology
Ph.D., Yale University
- Michael McKeon**
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Professor of English &
American Literature
*Ph.D., Columbia
University (Boston
University)*
- Sarah Mead**
Artist-in-Residence
(Music)
M.A., Stanford University
- R. Shep Melnick**
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University*
- James B. Merod**
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English and American
Literature
*Ph.D., Stanford
University*
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*Ph.D., Harvard
University*
- Helena B. Michie**
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*Ph.D., University of
Pennsylvania*
- Sidney Milkis*****
Assistant Professor of
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*Ph.D., University of
Pennsylvania*
- Christopher Miller**
Professor of
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*Ph.D., University of
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- Richard Miller**
Adjunct Professor of
Legal Studies
J.D., Harvard University
- Robin Miller**
Associate Professor of
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*Ph.D., Columbia
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- Edgardo Moctezuma y
Coronado**
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*M.A., Princeton
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*Ph.D., University of
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Theater Arts
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M.F.A., Yale University
- Ricardo B. Morant**
Minnie and Harold L.
Fierman Professor of
Psychology
Ph.D., Clark University
- Ruth Schachter
Morgenthau**
Adlai E. Stevenson
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Politics
Ph.D., Oxford University
- Paul A. Morrison**
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Literature
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- Leonard C. Mueller**
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Studies
*Ph.D., Harvard
University*
- William T. Murakami***
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*Ph.D., University of
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- Michael Murray**
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Arts Program and
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M.F.A., Boston University
- Bruria Nevo-Hacohen**
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M.A., Hebrew College
- Michael James
Newman**
Assistant Professor of
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*Ph.D., Harvard
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- Alfred Nisonoff**
Professor of Biology and
Rosenthal Basic Medical
Sciences Research Center
*Ph.D., The Johns
Hopkins University*
- Joan L. Nissman****
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Fine Arts
*Ph.D., Columbia
University*
- Edward C. Nowacki**
Assistant Professor of
Music
*Ph.D., Brandeis
University '50*
- Wellington W.
Nyangoni**
Professor of African and
Afro-American Studies
Ph.D., Howard University
- Kevin O'Brien**
Lecturer in Physical
Education
B.A., Tufts University
- Takashi Odagaki**
Assistant Professor of
Physics
Dr. Sc., Kyoto University
- Susan Moller Okin*****
Associate Professor of
Politics
*Ph.D., Harvard
University*
- Rudolf Oldenbourg**
Assistant Professor of
Physics
*Ph.D., University of
Konstanz*
- Sharon Olds**
Fannie Hurst Visiting
Professor of English and
American Literature
*Ph.D., Columbia
University*
- James D. Olesen**
Associate Professor of
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*B.A., University of
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- Richard J. Onorato**
Associate Professor of
English
*Ph.D., Harvard
University*
- Jessie Ann Owens**
Associate Professor of
Music
*Ph.D., Princeton
University*
- Richard S. Palais**
Professor of Mathematics
*Ph.D., Harvard
University*
- Thomas H. Parker**
Assistant Professor of
Mathematics
*Ph.D., Stanford
University*
- Hugh N. Pendleton**
Professor of Physics
*Ph.D., Carnegie Institute
of Technology*
- Kathleen Perry-Buxton**
Instructor in French and
Comparative Literature
B.A., Swarthmore College
- Troels Petersen**
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*Ph.D., State University of
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- Peter A. Petri**
Associate Professor of
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- Thomas Philipp**
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*Ph.D., University of
California, Los Angeles*
- Jayne Anne Phillips**
Fannie Hurst
Writer-in-Residence
*M.F.A., University of
Iowa*
- Bonit Porath**
Lecturer in Hebrew
B.A., Tel Aviv University
- Carolyn J. Pouncy**
Lecturer in History
*Ph.D., Stanford
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- Hillard Pouncy**
Assistant Professor of
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American Studies
*Ph.D., Massachusetts
Institute of Technology*
- Alex T. Prengel Jr.**
Lecturer with rank of
Assistant Professor of
Computer Science
*Ph.D., Brandeis
University '76*
- On leave Fall Term
1986-87*
- On leave Spring Term
1986-87**
- On leave 1986-87***

Joan L. Press Associate Professor of Biology and Rosenstiel Basic Medical Sciences Research Center <i>Ph.D., University of Pennsylvania</i>	Jehuda Reinharz Richard Koret Professor of Modern Jewish History and Director, Tauber Institute <i>Ph.D., Brandeis University '72</i>	George W. Ross Professor of Sociology <i>Ph.D., Harvard University</i>	Stephen A. Schuker Professor of History <i>Ph.D., Harvard University</i>	Takahiro Shiota** Assistant Professor of Mathematics <i>Ph.D., Harvard University</i>	Frederic T. Sommers** Harry A. Wolfson Professor of Philosophy <i>Ph.D., Columbia University</i>
Robert O. Preyer* Professor of English <i>Ph.D., Columbia University</i>	Shulamit Reinharz Assistant Professor of Sociology <i>Ph.D., Brandeis University '77</i>	Daniel Ruberman Assistant Professor of Mathematics <i>Ph.D., University of California-Berkeley</i>	Barney K. Schwalberg Professor of Economics <i>Ph.D., Harvard University</i>	William Shipman Lecturer in Physical Education <i>B.A., University of North Carolina</i>	David E. Spiro Instructor in International Relations <i>M.A., Princeton University</i>
Alan Sanford Prince Associate Professor of Linguistics and Cognitive Science <i>Ph.D., Massachusetts Institute of Technology</i>	Bernard Reisman Professor of American Jewish Communal Studies and Director, Hornstein Program <i>Ph.D., Brandeis University '70</i>	Zick Rubin Louis and Frances Salvage Professor of Social Psychology <i>Ph.D., University of Michigan</i>	Morris S. Schwartz Mortimer Gryznish Professor of Human Relations <i>Ph.D., University of Chicago</i>	Gerald L. Showstack Assistant Professor in the Hornstein Program (Lown School) <i>Ph.D., Brandeis University '82</i>	Susan Staves Professor of English <i>Ph.D., University of Virginia</i>
Armand Qualliotine Lecturer in Music <i>Ph.D., Brandeis University '86</i>	Rhonda Rider Artist-in-Residence (Music) <i>M.M., Yale University</i>	Murray Sachs Professor of French <i>Ph.D., Columbia University</i>	Gerald W. Schwarz Professor of Mathematics <i>Ph.D., Massachusetts Institute of Technology</i>	Stephanie Sieburth Lecturer with rank of Assistant Professor of Spanish <i>Ph.D., Princeton University</i>	Colin Steel Instructor of Chemistry <i>Ph.D., Edinburgh University</i>
Gila Ramras-Rauch Visiting Associate Professor of Hebrew Literature <i>Ph.D., Bar-Ilan University (Hebrew College)</i>	Vardit Ringvald Lecturer in Hebrew <i>B.A., The Hebrew University</i>	Benson Saler Associate Professor of Anthropology <i>Ph.D., University of Pennsylvania</i>	Silvan S. Schweber Professor of Physics and Richard Koret Professor in the History of Ideas <i>Ph.D., Princeton University</i>	Lawrence Siegel Artist-in-Residence (Music) <i>M.F.A., Brandeis University</i>	Maurice R. Stein Jacob S. Potofsky Professor of Sociology <i>Ph.D., Columbia University</i>
Leonard A. Rapping Visiting Professor of Economics <i>Ph.D., University of Chicago (National Academy of Sciences)</i>	Shi-shyr Roan Visiting Professor of Mathematics <i>Ph.D., Brandeis University '74 (Tsing Hua University)</i>	Peter W. Samal Lecturer in Chemistry <i>Ph.D., Tufts University</i>	David M. Scooby Instructor in History <i>M.Phil., Yale University</i>	Marianne L. Simmel Adjunct Professor of Psychology <i>Ph.D., Harvard University</i>	Robert Stevenson Professor of Chemistry <i>D.Sc., Glasgow University</i>
Esther Ratner Adjunct Assistant Professor of French <i>Ph.D., Brandeis University '81</i>	David H. Roberts Associate Professor of Astrophysics <i>Ph.D., Stanford University</i>	Jerry Samet Assistant Professor of Philosophy and History of Ideas <i>Ph.D., City University of New York</i>	Nancy J. Scott* Associate Professor of Fine Arts <i>Ph.D., New York University</i>	Marshall Sklare Klutznick Family. Professor of Contemporary Jewish Studies and Sociology <i>Ph.D., Columbia University</i>	Douglas J. Stewart* Professor of Classical and Oriental Studies <i>Ph.D., Cornell University</i>
Benjamin C. I. Ravid*** Jennie and Mayer Weisman Professor of Jewish History <i>Ph.D., Harvard University</i>	Nicholas Rodis Professor of Physical Education <i>Ed.M., American International College</i>	Michael Schiano Lecturer in Music <i>M.Mus., University of London</i>	James C. Scovel Assistant Professor of Mathematics <i>Ph.D., New York University</i>	John H. Smith*** Professor of English <i>Ph.D., University of Illinois</i>	Alan Stolzenberg Assistant Professor of Chemistry <i>Ph.D., Stanford University</i>
Mary Ruth Ray Artist-in-Residence (Music) <i>B.M., State University of New York, Purchase</i>	Alberto Rodríguez Lecturer in Spanish <i>M.A., Clark University</i>	Jerome A. Schiff Abraham and Etta Goodman Professor of Biology <i>Ph.D., University of Pennsylvania</i>	Erik Selsing Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center <i>Ph.D., Purdue University</i>	Wilma Smith Artist-in-Residence (Music)	Lyman Stookey Adjunct Associate Professor of Legal Studies <i>L.L.M., Boston University</i>
Alfred G. Redfield Professor of Physics and Biochemistry and Rosenstiel Basic Medical Sciences Research Center <i>Ph.D., University of Illinois</i>	Amelie Rorty Visiting Professor of Philosophy <i>Ph.D., Yale University (Rutgers University)</i>	Robert F. Schleif Professor of Biochemistry <i>Ph.D., University of California, Berkeley</i>	Ranjan Sen* Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center <i>Ph.D., Columbia University</i>	Leigh Sneddon Assistant Professor of Physics <i>D. Phil., University of Oxford</i>	James A. Storer Associate Professor of Computer Science <i>Ph.D., Princeton University</i>
Joseph Reimer Assistant Professor in the Hornstein Program (Lown School) <i>Ed.D., Harvard University</i>	Michael Rosbash Professor of Biology <i>Ph.D., Massachusetts Institute of Technology</i>	Robert A. Schneider Assistant Professor of History and Manheimer Term Assistant Professor of University Studies <i>Ph.D., University of Michigan</i>	Harold S. Shapiro Walter W. Naumburg Professor of Music <i>A.B., Harvard University</i>	Barry B. Snider Professor of Chemistry <i>Ph.D., Harvard University</i>	On leave Fall Term 1986-87* On leave Spring Term 1986-87** On leave 1986-87***
	Myron Rosenblum Professor of Chemistry <i>Ph.D., Harvard University</i>	Howard J. Schnitzer Professor of Physics <i>Ph.D., University of Rochester</i>	Susan Shevitz Lecturer in Jewish Education (on the Sumner N. Milender Family Foundation) <i>Ed.M., Harvard University</i>	Esta Sofman Lecturer in English and American Literature <i>M.A., Fairleigh Dickinson University</i>	
	Robert Rosenblum Adjunct Associate Professor of Legal Studies <i>Ph.D., University of Colorado</i>	John E. Schrecker Associate Professor of History <i>Ph.D., Harvard University</i>			

- Mary E. Sullivan**
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B.S., Boston State College
- Lois G. Swack**
Lecturer with rank of Assistant Professor in the Horstein Program
Ph.D., Union Graduate School
- Peter Swiggart**
Professor of English
Ph.D., Yale University
- Andrew G. Szent-Györgyi*****
Professor of Biology
M.D., University of Budapest
- Robert Szulkin**
Professor of Russian
Ph.D., Harvard University
- Susan M. Taylor**
Lecturer in Spanish
M.A., University of Michigan
- Andreas Teuber**
Assistant Professor of Philosophy and History of Ideas (on the Mellon Foundation)
Ph.D., Harvard University
- Ralph Thaxton Jr.**
Associate Professor of Politics
Ph.D., University of Wisconsin
- Roger Tibbetts**
Salzman Visiting Artist
M.F.A., Yale University
- Serge N. Timasheff**
Professor of Biochemistry
Ph.D., Fordham University
- Caldwell Titcomb*****
Professor of Music
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- Gary A. Tobin**
Associate Professor of Jewish Community Research and Planning and Director, Center for Modern Jewish Studies (Lown School)
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- Ian A. Todd*****
Professor of Classical and Oriental Studies
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- James T. Todd**
Associate Professor of Psychology
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